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# **MICHIGAN FATAL AND SERIOUS INJURY TRAFFIC-CRASH PATTERNS: 1994-1998**

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| 16. Abstract<br><br>This report details facts and figures relevant to a better understanding of possible causes of and prevention implications for deaths and serious injuries due to traffic crashes in the state of Michigan during the period January 1994 through December 1998. Select results in brief: <ul style="list-style-type: none"> <li>• Statistical analyses suggest that the performance goals selected by OHSP are appropriate.</li> <li>• Michigan experienced a general decline in the proportion of fatal or serious-injury (KA) crashes from 1994 to 1998, however this decline is smaller than it has been in the past and may foreshadow an upswing in crashes.</li> <li>• It is reasonable to target male drivers age 21-34 years in particular to help OHSP achieve its traffic safety goals.</li> <li>• The summer months remain good targets for program efforts, but we may need to revisit programs during May and December because of recent increases in crashes during these months.</li> <li>• The vast majority of KA crashes occur on city/county roads, thus it is rational to continue to focus efforts on reducing the KA crash count on these city/county roads.</li> <li>• By far the largest vehicle group involved in KA crashes is passenger cars.</li> <li>• Because of the hazard drivers age 14-18 present to themselves and others as demonstrated by their crash rates, this is an important, if small, target group.</li> <li>• Drivers age 70 and over represent only 10% of all KA crash cases and do not have higher crash rates than the "average" driver, and thus are not a promising target group for achieving the overall traffic safety goals set by OHSP.</li> <li>• Males age 21-34 have the largest number of crashes and highest rates of KA-HBD 'had-been-drinking' crash involvement.</li> <li>• The largest reductions in KA-HBD crashes have occurred on months and days that have had the historic highs. The effect seems to be toward leveling off month-to-month, day-to-day variation. This may mean that we are beginning to see the boundaries of the "hard-core" problem with respect to KA-HBD crashes.</li> <li>• There are as many pedestrians that experience KA injury in crashes as rear-seat occupants (about 1,000 each year).</li> </ul> |  |  |           |
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# Table of Contents

|   |           |
|---|-----------|
| <b>EXECUTIVE SUMMARY .....</b>  | <b>V</b>  |
| STATISTICAL TREND ANALYSIS .....  | V         |
| KEY RESULTS .....   | VI        |
| <b>FATAL OR SERIOUS INJURY (KA) CRASHES .....</b>                       | <b>1</b>  |
| <b>ALL DRIVERS .....</b>  | <b>1</b>  |
| Table 1 - Number and Rate by Year .....                                 | 1         |
| Table 2 - Number and Rate by Age, Sex, and Year .....                   | 2         |
| Table 3 - Number by Hazardous Action and Year (Single-Vehicle) .....    | 13        |
| Table 4 - Number by Hazardous Action and Year (Multiple-Vehicle) .....  | 14        |
| Table 5 - Number by Vehicle Type and Year .....                         | 15        |
| Chart 1 - Number by Month and Year .....                                | 5         |
| Chart 2 - Number by Day of Week and Year .....                          | 6         |
| Chart 3 - Number by Light Condition and Year .....                      | 7         |
| Chart 4 - Number by Precipitation and Year .....                        | 8         |
| Chart 5 - Number by Highway Class and Year .....                        | 9         |
| Chart 6 - Number by Speed Limit and Year .....                          | 10        |
| Chart 7 - Number by Road Surface Condition and Year .....               | 11        |
| <b>DRIVERS AGE 14-18.....</b>   | <b>16</b> |
| Table 6 - Number and Rate by Year .....                                 | 16        |
| Table 7 - Number and Rate by Age, Sex, and Year .....                   | 17        |
| Table 8 - Number by Hazardous Action and Year (Single-Vehicle) .....    | 25        |
| Table 9 - Number by Hazardous Action and Year (Multiple-Vehicle) .....  | 26        |
| Table 10 - Number by Vehicle Type and Year .....                        | 27        |
| Chart 8 - Number by Month and Year .....                                | 18        |
| Chart 9 - Number by Day of Week and Year .....                          | 19        |
| Chart 10 - Number by Light Condition and Year .....                     | 20        |
| Chart 11 - Number by Precipitation and Year .....                       | 21        |
| Chart 12 - Number by Highway Class and Year .....                       | 22        |
| Chart 13 - Number by Speed Limit and Year .....                         | 23        |
| Chart 14 - Number by Road Surface Condition and Year .....              | 24        |
| <b>DRIVERS AGE 70+ .....</b>  | <b>28</b> |
| Table 11 - Number and Rate by Year .....                                | 28        |
| Table 12 - Number and Rate by Age, Sex, and Year .....                  | 29        |
| Table 14 - Number by Hazardous Action and Year (Single-Vehicle) .....   | 38        |
| Table 15 - Number by Hazardous Action and Year (Multiple-Vehicle) ..... | 39        |
| Table 16 - Number by Vehicle Type and Year .....                        | 40        |
| Chart 15 - Number by Month and Year .....                               | 31        |
| Chart 16 - Number by Day of Week .....                                  | 32        |
| Chart 17 - Number by Light Condition and Year .....                     | 33        |
| Chart 18 - Number by Precipitation and Year .....                       | 34        |
| Chart 19 - Number by Highway Class and Year .....                       | 35        |
| Chart 20 - Number by Speed Limit and Year .....                         | 36        |
| Chart 21 - Number by Road Surface Condition and Year .....              | 37        |

## Table of Contents

|   |           |
|---|-----------|
| <b>KA INJURED OCCUPANTS .....</b>   | <b>41</b> |
| ALL DRIVERS .....   | 41        |
| Table 17 - Number and Rate by Occupant Position and Year.....                   | 41        |
| Table 18 - Number and Rate Among Pedestrians and Bicyclists .....               | 42        |
| DRIVERS AGE 14-18 .....   | 48        |
| Table 24 - Number by Seat Position and Year .....                               | 48        |
| Table 25 - Number by Age, Sex, and Occupant Type .....                          | 49        |
| DRIVERS AGE 70+ .....   | 53        |
| Table 29 - Number and Rate by Seat Position and Year.....                       | 53        |
| Table 30 - Number by Age and Gender .....                                       | 54        |
| <b>'HAD-BEEN DRINKING' KA CRASHES .....</b>                                     | <b>57</b> |
| ALL DRIVERS .....   | 57        |
| Table 33 - Number and Rate by Year .....  | 57        |
| Table 34 - Number and Rate by Age, Sex, and Year .....                          | 58        |
| Table 37 - Number of HBD Pedestrian and Bicyclist by Age, Sex, and Year .....   | 61        |
| Chart 22 - Number by Month and Year .....                                       | 63        |
| Chart 23 - Number by Day of Week .....  | 64        |
| Chart 24 - Number by Highway Class and Year .....                               | 65        |
| DRIVERS AGE 14-18 .....   | 66        |
| Table 39 - Number and Rate by Year .....  | 66        |
| Table 40 - Number and Rate by Age, Sex, and Year .....                          | 67        |
| Chart 25 - Number by Month and Year .....                                       | 68        |
| Chart 26 - Number by Day of Week .....  | 69        |
| Chart 27 - Number by Highway Class and Year .....                               | 70        |
| DRIVERS AGE 70+ .....   | 71        |
| Table 41 - Number and Rate by Year .....  | 71        |
| Table 42 - Number and Rate by Age, Sex, and Year .....                          | 72        |
| Chart 28 - Number by Month and Year .....                                       | 74        |
| Chart 29 - Number by Day of Week and Year .....                                 | 75        |
| Chart 30 - Number by Highway Class and Year .....                               | 76        |
| <b>'HAD-BEEN-DRINKING' KA CRASH OCCUPANTS .....</b>                             | <b>77</b> |
| ALL DRIVERS .....   | 77        |
| Table 44 - Number by Age, Sex, Occupant Type, and Year .....                    | 77        |
| <b>BELTS, BAGS AND HELMETS .....</b>  | <b>81</b> |
| ALL DRIVERS .....   | 81        |
| Table 48 - Belt Use by Seat Position and Year.....                              | 81        |
| Table 49 - Air Bag Deployment by Seat Position and Year .....                   | 82        |
| Table 50 - Helmet Use by Seat Position and Year .....                           | 83        |
| Table 51 - Belt use by Seat Position, Air Bag Deployment, and Year .....        | 84        |
| Table 52 - Belt Use by Occupant Age, Sex, Injury, Seat Position, and Year ..... | 85        |

# Executive Summary

## Statistical Trend Analysis

This year, the focus of the statistical trend analyses was to examine trends related to two central goals for the Office of Highway Safety Planning (OHSP) — namely reducing the proportion of fatal and severe injury (KA) crashes to 3% by the year 2001 and to reduce the proportion of crash-involved occupants who experience fatal or serious (KA) injury to 1.5% by the year 2001.

The statistical methods used to calculate the predictions presented here are nearly identical to those used in the previous report. Put simply, data on the proportion of KA crashes or injuries for each month for the period 1993-

1998 were included in a statistical time-series model that estimated what Michigan could expect to experience in the future, based on the statistical experience observed in the data. These statistical procedures result in data describing the "best" estimate of what is expected, as well as 95% confidence limits. These limits describe the range within which we can be 95% confident that the future KA crash and injury rates will fall if there is no change in the statistical pattern.

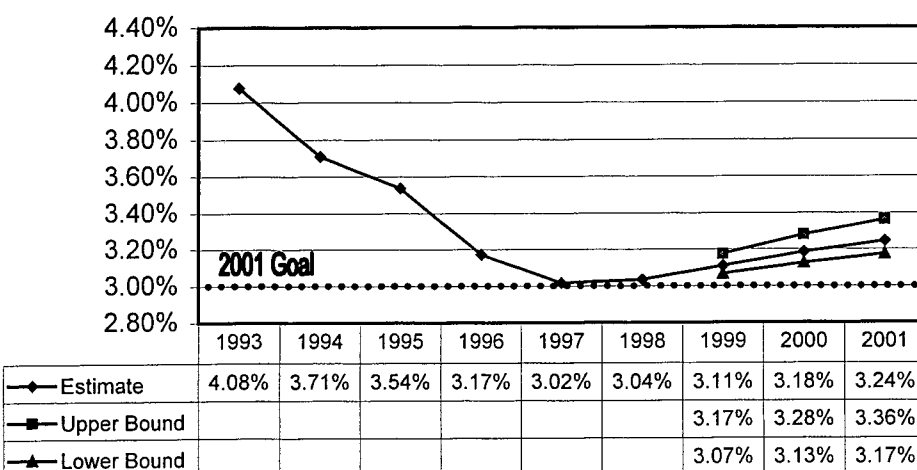
The charts to the left show the proportion of crashes resulting in KA injury and the proportion of crash-involved occupants experiencing KA injury for the period 1993-1998 and predicted proportions for 1999-2001.

Because the general shape and statistical predictions for both proportions examined here are nearly identical, descriptions in the following discussion apply to both unless otherwise noted.

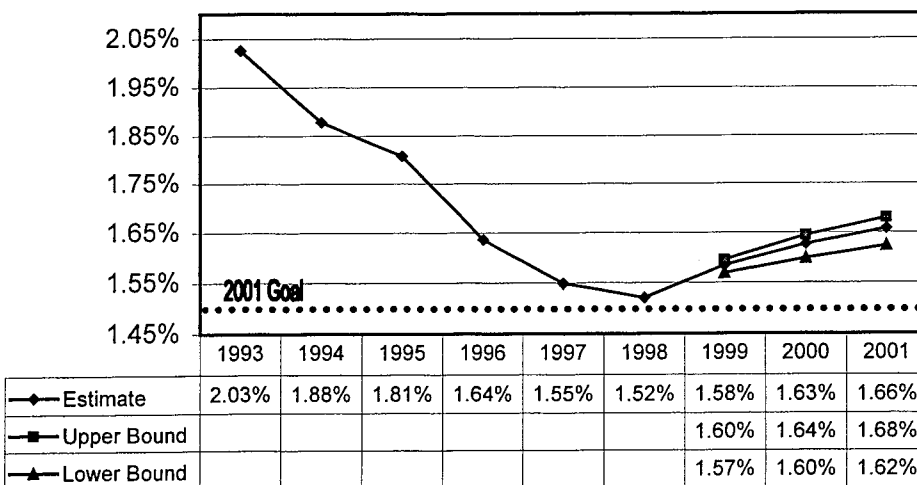
The charts show a general decline in the proportion of KA crashes and crash-involved persons experiencing KA injury from 1993 to 1998. However, these charts also show that the declines from earlier in the period are not being seen

in the most recent years, and we may even be bottoming out. Predictions about future proportions show that a slight increase in these proportions from 1998 levels may be anticipated. Based on the statistical analyses, we

**Proportion of Crashes Resulting in KA Injury**



**Proportion of Occupants Receiving KA Injury**



cannot count on a continuation of the current trend to achieve the proposed goals of reducing the proportion of fatal and severe injury (KA) crashes to 3% by the year 2001 and to reduce the proportion of crash-involved occupants who experience fatal or serious (KA) injury to 1.5% by the year 2001 without some change to further reduce these numbers. An examination of the 95% confidence levels shows that we should not be surprised if (absent some new change to the environment) we see a slight increase in these proportions. However, the "best estimate" predictions from these statistical models suggest that continued efforts will be required to achieve the current goals.

How do these findings impact OHSP planning? First, the statistical analyses suggest that the goals selected by OHSP are appropriate and rational. The goals are not beyond what one could expect to achieve given the efforts that can be exerted by OHSP and its partners, yet the goals appear to be beyond that which could be expected to occur in the absence of new program efforts from OHSP. Furthermore, if the apparent decline in these proportions from 1993 to 1998 is due in part to OHSP and partner efforts, then it may well be the case that OHSP and its partners must not only continue their current program efforts, but these efforts will need to be increased in intensity, focus, or efficiency to achieve the selected goals. In addition, it would appear that absent an increase in program intensity, focus or efficiency, Michigan may experience increasing numbers and rates of KA crash involvement.

## Key Results

| Number and Rate of Fatal or Serious Injury Crashes |                   |                          |                                   |                          |                                |
|--|-------------------|--------------------------|-----------------------------------|--------------------------|--------------------------------|
| Year   | Number of Crashes | Rate per 100 Million VMT | Rate per 1000 Registered Vehicles | Rate per 1000 Population | Rate per 1000 Licensed Drivers |
| 94   | 14,762            | 17.325                   | 1.869                             | 1.555                    | 2.236                          |
| 95   | 14,890            | 17.373                   | 1.846                             | 1.559                    | 2.231                          |
| 96   | 13,820            | 15.765                   | 1.673                             | 1.445                    | 2.071                          |
| 97   | 12,843            | 14.393                   | 1.534                             | 1.341                    | 1.881                          |
| 98   | 12,201            | 13.318                   | 1.422                             | 1.243                    | 1.765                          |
| Change 94 to 98                                    | -17.35%           | -23.13%                  | -23.91%                           | -20.06%                  | -21.01%                        |
| Change 97 to 98                                    | -5.00%            | -7.47%                   | -7.30%                            | -7.31%                   | -6.17%                         |

The table above lists the number of crashes in which the most serious injury noted on the police crash report was a fatal injury (Killed) or a serious (A-level) injury (hereafter identified together as KA injuries) along with associated rates as indicated. The last row of the table shows the percent increase or decrease in the indicated measure in the 1-year period 1997 to 1998. For example, in the column titled *Number of Crashes* you can see that the figure in the last row, *Change 97 to 98*, is -5.00%. This means that there were 5 percent fewer KA crashes in 1998 than in 1997. The row just under the double line shows the percent increase or decrease in the indicated measure over the 5-year period 1994 to 1998. For example, in the column titled *Number of Crashes*, you can see that the figure in the next-to-last row, *Change 94 to 98*, is -17.35%. This means that there were 17.35 percent fewer KA crashes in 1998 than in 1994.

A word of caution for interpreting the change percentages presented in this table. The 95% confidence band for each percentage reported in this table is +/- 7%. What this means is that percentages under 7% in this table are not different than we would have expected given observed year-to-year fluctuations. Using the earlier examples, we can say that there was a statistically significant decline in the number of crashes that occurred between 1994 and 1998 because the decline (17.35%) is greater than 7%. On the other hand, we cannot say that there was a statistically significant decline in the number of crashes that occurred between 1997 and 1998 because the decline (5.00%) is less than 7%.



This table shows that there have been significant declines in KA crashes and crash rates since 1994. It also shows that while the number of KA crashes did not decline significantly between 1997 and 1998, the rate of crashes per VMT (vehicle miles travelled), registered vehicle, and population did decline. When we examine the change figures for the number of crashes versus the crash rates, we see that the crash-rate figures are 30% to 50% higher than those of the number of crashes. This indicates that significant progress is being achieved because the number of crashes that occur each year is declining faster than the amount of travel or vehicles on the road.

| Fatal or Serious Injury Crash Frequency and Rates<br>By Age, Sex, and Year |     |                    |         |                             |                                   |
|--|-----|--------------------|---------|-----------------------------|-----------------------------------|
| Driver Age   | Sex | Year               | Count   | Rate per 1000<br>Population | Rate per 1000<br>Licensed Drivers |
| 16-20 yr   | F   | 94                 | 1,010   | 3.103                       | 3.964                             |
|  |     | 95                 | 1,040   | 3.154                       | 4.001                             |
|  |     | 96                 | 973     | 2.895                       | 3.743                             |
|  |     | 97                 | 881     | 2.272                       | 3.279                             |
|  |     | 98                 | 828     | 2.334                       | 3.03                              |
|  |     | Change<br>94 to 98 | -18.02% | -24.78%                     | -23.56%                           |
|  |     | Change<br>97 to 98 | -6.02%  | 2.73%                       | -7.59%                            |
|  | M   | 94                 | 1,732   | 5.187                       | 6.395                             |
|  |     | 95                 | 1,747   | 5.152                       | 6.374                             |
|  |     | 96                 | 1,594   | 4.548                       | 5.816                             |
|  |     | 97                 | 1,493   | 4.16                        | 5.264                             |
|  |     | 98                 | 1,412   | 3.845                       | 4.913                             |
|  |     | Change<br>94 to 98 | -18.48% | -25.87%                     | -23.17%                           |
|  |     | Change<br>97 to 98 | -5.43%  | -7.57%                      | -6.67%                            |
| 21-34 yr   | F   | 94                 | 1,590   | 1.563                       | 1.686                             |
|  |     | 95                 | 1,557   | 1.557                       | 1.679                             |
|  |     | 96                 | 1,512   | 1.551                       | 1.63                              |
|  |     | 97                 | 1,401   | 1.517                       | 1.562                             |
|  |     | 98                 | 1,141   | 1.188                       | 1.29                              |
|  |     | Change<br>94 to 98 | -28.24% | -23.99%                     | -23.49%                           |
|  |     | Change<br>97 to 98 | -18.56% | -21.69%                     | -17.41%                           |
|  | M   | 94                 | 3,214   | 3.251                       | 3.411                             |
|  |     | 95                 | 3,138   | 3.23                        | 3.377                             |
|  |     | 96                 | 2,805   | 2.945                       | 3.019                             |
|  |     | 97                 | 2,605   | 2.686                       | 2.868                             |
|  |     | 98                 | 2,395   | 2.585                       | 2.657                             |
|  |     | Change<br>94 to 98 | -25.48% | -20.49%                     | -22.10%                           |
|  |     | Change<br>97 to 98 | -8.06%  | -3.76%                      | -7.36%                            |

A word of caution for interpreting the change percentages presented in this and subsequent tables. The 95% confidence band for each percentage reported in this and all subsequent tables is +/-15%. What this means is that percentages under 15% in these tables are not different than we would have expected given observed year-to-year fluctuations.

The data in this table (which continues on the next two pages) show that declines in crashes and crash rates were not distributed evenly across age groups.

In general, the largest reductions were observed in the 21-34 year age group, particularly among females of this age. The smallest changes were observed among drivers age 35-54.

The implications for these data on OHSP program planning are mixed. It appears that programs and policies designed to reduce KA crashes involving drivers less than age 35 have been quite successful. While this is great, it also means that future declines among this large and important market segment may be more difficult to achieve than those in years past.

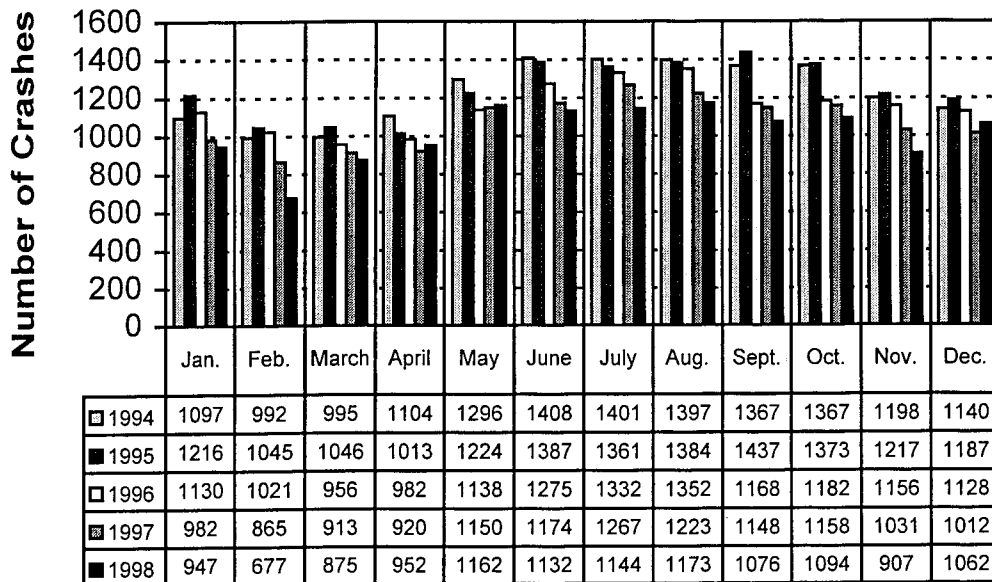
**Fatal or Serious Injury Crash Frequency and Rates  
By Age, Sex, and Year**

| <i>Driver Age</i> | <i>Sex</i> | <i>Year</i>                | <i>Count</i> | <i>Rate per 1000<br/>Population</i> | <i>Rate per 1000<br/>Licensed Drivers</i> |
|-------------------|------------|----------------------------|--------------|-------------------------------------|---|
| 35-54 yr          | F          | 94                         | 1,266        | 0.942                               | 0.984                                     |
|                   |            | 95                         | 1,374        | 0.994                               | 1.042                                     |
|                   |            | 96                         | 1,340        | 0.973                               | 1.017                                     |
|                   |            | 97                         | 1,191        | 0.829                               | 0.871                                     |
|                   |            | 98                         | 1,252        | 0.847                               | 0.901                                     |
|                   |            | <i>Change<br/>94 to 98</i> | -1.11%       | -10.08%                             | -8.43%                                    |
|                   |            | <i>Change<br/>97 to 98</i> | 5.12%        | 2.17%                               | 3.44%                                     |
|                   | M          | 94                         | 2,315        | 1.781                               | 1.836                                     |
|                   |            | 95                         | 2,440        | 1.825                               | 1.89                                      |
|                   |            | 96                         | 2,243        | 1.641                               | 1.737                                     |
|                   |            | 97                         | 2,171        | 1.641                               | 1.62                                      |
|                   |            | 98                         | 2,149        | 1.501                               | 1.576                                     |
|                   |            | <i>Change<br/>94 to 98</i> | -7.17%       | -15.72%                             | -14.16%                                   |
|                   |            | <i>Change<br/>97 to 98</i> | -1.01%       | -8.53%                              | -2.72%                                    |
| 55-69 yr          | F          | 94                         | 386          | 0.65                                | 0.737                                     |
|                   |            | 95                         | 384          | 0.65                                | 0.73                                      |
|                   |            | 96                         | 343          | 0.582                               | 0.653                                     |
|                   |            | 97                         | 323          | 0.572                               | 0.597                                     |
|                   |            | 98                         | 349          | 0.571                               | 0.63                                      |
|                   |            | <i>Change<br/>94 to 98</i> | -9.59%       | -12.15%                             | -14.52%                                   |
|                   |            | <i>Change<br/>97 to 98</i> | 8.05%        | -0.17%                              | 5.53%                                     |
|                   | M          | 94                         | 624          | 1.175                               | 1.217                                     |
|                   |            | 95                         | 675          | 1.272                               | 1.311                                     |
|                   |            | 96                         | 609          | 1.152                               | 1.183                                     |
|                   |            | 97                         | 604          | 1.1                                 | 1.146                                     |
|                   |            | 98                         | 588          | 1.071                               | 1.09                                      |
|                   |            | <i>Change<br/>94 to 98</i> | -5.77%       | -8.85%                              | -10.44%                                   |
|                   |            | <i>Change<br/>97 to 98</i> | -2.65%       | -2.64%                              | -4.89%                                    |

On the other hand, it would appear from the data that we have had far less success with another significant segment of the market, namely drivers age 35-54. If OHSP's crash goals are to be met, this important segment of the population will need to be reached more effectively than has been the case since 1994.

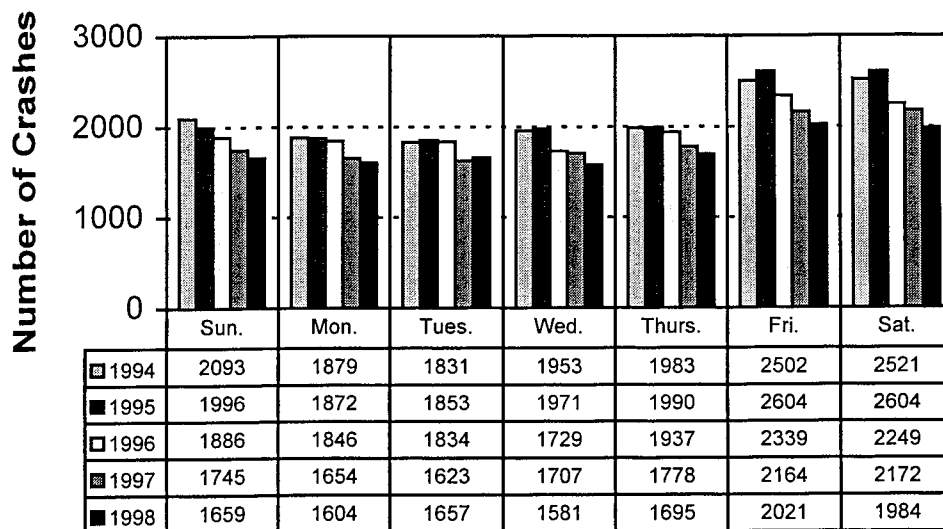
On the brighter side, there have been two significant traffic-safety policy changes that have occurred or will occur soon that will likely have a major impact on KA crash rates and frequencies. Specifically, Michigan's standard-enforcement safety-belt-use law will go into effect in the spring of 2000 and a set of laws affecting sanctions issued to repeat-offender drunk drivers went into effect fall of 1999. Both of these policy changes should have significant effects in reducing the number and rate of KA crashes among those segments of the driver population where the KA crash problem is most severe.

## Fatal or Serious Injury Crashes by Month and Year



Based on the data from the preceding chart, it would appear that we may be moving toward a period in which the summer crash experience is only slightly higher than that of most other periods, unlike earlier years in which the summer months had by far the greatest KA crash experience. We are also beginning to see that the year-to-year reductions observed since 1994 are generally becoming smaller and have even reversed themselves in a few cases (note especially May and December). These findings would suggest that additional effort may be required to maintain and possibly recover the rate of decline observed in prior years.

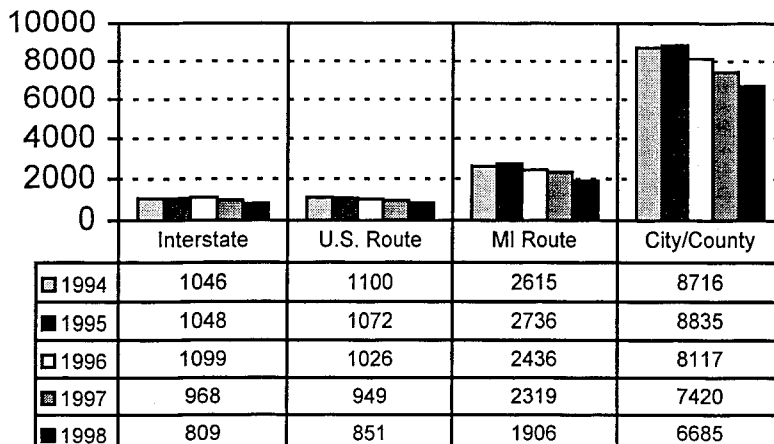
## Fatal or Serious Injury Crashes by Day of Week and Year



As was the case when we examined the month-by-month chart above, in this chart we can see that the rate of year-to-year declines observed each day of the week has gotten smaller in recent years (and reversed itself on Tuesdays). Once again, these data point out that significant efforts may be required to maintain the previous levels of decline.

## Fatal or Serious Injury Crashes by Highway Class and Year

Number of Crashes



City/County roads continue to predominate the KA crash picture in Michigan. In order for Michigan to achieve its traffic-safety goals, greater success will be required on these roadways. Note that less than 20% of all crashes occur on interstate OR U.S. routes.

### Number and Rate of Fatal or Serious Injury Crashes Drivers Age 14-18

| Year            | Number of Crashes | Rate per 1000 Licensed Drivers |
|-----------------|-------------------|--------------------------------|
| 94              | 2792              | 9.48                           |
| 95              | 2735              | 9.00                           |
| 96              | 2513              | 8.27                           |
| 97              | 2390              | 6.79                           |
| 98              | 2174              | 6.02                           |
| Change 94 to 98 | -22.13%           | -36.50%                        |
| Change 97 to 98 | -9.04%            | -11.34%                        |

This table shows that the numbers of KA crashes and crash rates declined each year since 1994. Although this is a small subgroup, it remains an important one. As the effects of the relatively new graduated licensing system become more evident as drivers move through the system, it is expected that these numbers will decline rapidly.

### Number and Rate of Fatal or Serious Injury Crashes Drivers Age 70+

| Year            | Number of Crashes | Rate per 1000 Licensed Drivers |
|-----------------|-------------------|--------------------------------|
| 94              | 1,290             | 2.13                           |
| 95              | 1,348             | 2.14                           |
| 96              | 1,333             | 2.11                           |
| 97              | 1,234             | 1.89                           |
| 98              | 1,221             | 1.81                           |
| Change 94 to 98 | -5.35%            | -15.02%                        |
| Change 97 to 98 | -1.06%            | -4.23%                         |

This is a small but growing subpopulation which does not appear to have an overwhelming KA crash problem at the moment. However, because this group is growing in size, it should be carefully monitored.

| <b>Number and Rate of Fatal or Serious Injuries<br/>Among Pedestrians and Bicyclists</b> |             |                                  |                                 |
|--|-------------|----------------------------------|---------------------------------|
|  | <i>Year</i> | <i>Number of KA<br/>Injuries</i> | <i>Rate per 100K Population</i> |
| <i>Bike</i>  | 94          | 467                              | 4.920                           |
|  | 95          | 427                              | 4.472                           |
|  | 96          | 397                              | 4.151                           |
|  | 97          | 389                              | 4.062                           |
|  | 98          | 375                              | 3.820                           |
| <i>Pedestrian</i>  | 94          | 1210                             | 12.748                          |
|  | 95          | 1271                             | 13.310                          |
|  | 96          | 1189                             | 12.432                          |
|  | 97          | 1073                             | 11.205                          |
|  | 98          | 1084                             | 11.042                          |

This table shows that pedestrian crashes outnumber bicycle crashes by 3 to 1. More importantly, note that the number of pedestrian KA injuries in 1998 (1,084) is actually slightly larger than that for KA injuries experienced in the rear seat of motor vehicles (995). This pattern holds true for each year examined. When considering program resources, we should keep in mind that KA crash injuries to pedestrians are as numerous as those to rear-seat occupants.

| <b>Number and Rate of Fatal or Serious Injury<br/>'Had-Been-Drinking' Crashes</b> |                              |                                     |  |                                     |   |
|---|------------------------------|-------------------------------------|--|-------------------------------------|---|
| <i>Year</i>   | <i>Number of<br/>Crashes</i> | <i>Rate per 100<br/>Million VMT</i> | <i>Rate per 1000<br/>Registered Vehicles</i> | <i>Rate per 1000<br/>Population</i> | <i>Rate per 1000<br/>Licensed Drivers</i> |
| 94  | 3,294                        | 3.866                               | 0.417  | 0.347                               | 0.499                                     |
| 95  | 3,198                        | 3.731                               | 0.397  | 0.335                               | 0.479                                     |
| 96  | 2,781                        | 3.172                               | 0.337  | 0.291                               | 0.417                                     |
| 97  | 2,635                        | 2.953                               | 0.315  | 0.275                               | 0.386                                     |
| 98  | 2,518                        | 2.748                               | 0.293  | 0.257                               | 0.364                                     |
| <i>Change<br/>94 to 98</i>  | -23.56%                      | -28.92%                             | -29.74%                                      | -25.21%                             | -27.05%                                   |
| <i>Change<br/>94 to 98</i>  | -4.44%                       | -6.94%                              | -6.98%                                       | -6.54%                              | -5.70%                                    |

This table shows that significant declines in had-been-drinking (HBD) crashes resulting in death or serious injury have been experienced since 1994. It is likely that the new set of laws designed to impact the repeat alcohol offender that went into effect October 1999 will have a noticeable impact on these figures in years to come.

**Fatal or Serious Injury Crash Frequency and Rates  
'Had-Been-Drinking' Crashes  
by Year, Age Group, and Sex**

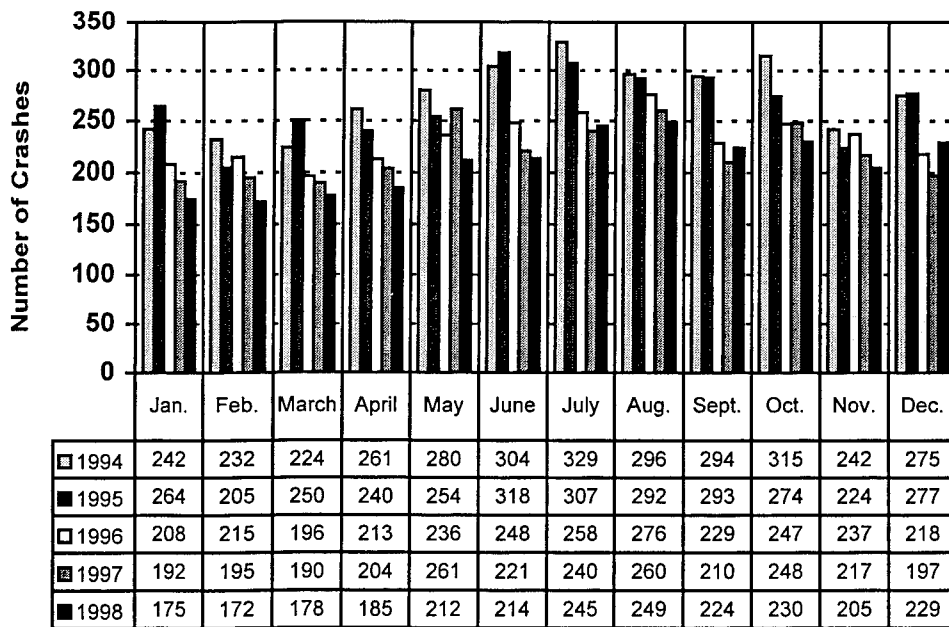
| <i>Age</i> | <i>Sex</i> | <i>Year</i>        | <i>Number of<br/>Crashes</i> | <i>Rate per 1000<br/>Population</i> | <i>Rate per 1000<br/>Licensed Drivers</i> |
|------------|------------|--------------------|------------------------------|-------------------------------------|---|
| 16-20 yr   | F          | 94                 | 59                           | 0.181                               | 0.232                                     |
|            |            | 95                 | 56                           | 0.17                                | 0.215                                     |
|            |            | 96                 | 64                           | 0.19                                | 0.246                                     |
|            |            | 97                 | 37                           | 0.095                               | 0.138                                     |
|            |            | 98                 | 62                           | 0.175                               | 0.227                                     |
|            |            | Change<br>94 to 98 | 5.08%                        | -3.31%                              | -2.16%                                    |
|            |            | Change<br>97 to 98 | 67.57%                       | 84.21%                              | 64.49%                                    |
|            | M          | 94                 | 291                          | 0.871                               | 1.075                                     |
|            |            | 95                 | 296                          | 0.873                               | 1.08                                      |
|            |            | 96                 | 250                          | 0.713                               | 0.912                                     |
|            |            | 97                 | 221                          | 0.616                               | 0.779                                     |
|            |            | 98                 | 232                          | 0.632                               | 0.807                                     |
|            |            | Change<br>94 to 98 | -20.27%                      | -27.44%                             | -24.93%                                   |
|            |            | Change<br>97 to 98 | 4.98%                        | 2.60%                               | 3.59%                                     |
| 21-34 yr   | F          | 94                 | 306                          | 0.301                               | 0.324                                     |
|            |            | 95                 | 271                          | 0.271                               | 0.292                                     |
|            |            | 96                 | 261                          | 0.268                               | 0.281                                     |
|            |            | 97                 | 225                          | 0.244                               | 0.251                                     |
|            |            | 98                 | 208                          | 0.217                               | 0.235                                     |
|            |            | Change<br>94 to 98 | -32.03%                      | -27.91%                             | -27.47%                                   |
|            |            | Change<br>97 to 98 | -7.56%                       | -11.07%                             | -6.37%                                    |
|            | M          | 94                 | 1280                         | 1.295                               | 1.359                                     |
|            |            | 95                 | 1247                         | 1.284                               | 1.342                                     |
|            |            | 96                 | 1007                         | 1.057                               | 1.084                                     |
|            |            | 97                 | 1035                         | 1.067                               | 1.14                                      |
|            |            | 98                 | 911                          | 0.983                               | 1.011                                     |
|            |            | Change<br>94 to 98 | -28.83%                      | -24.09%                             | -25.61%                                   |
|            |            | Change<br>97 to 98 | -11.98%                      | -7.87%                              | -11.32%                                   |

The largest number of HBD crashes occur among male drivers age 21-54, but it is male drivers age 21-34 that represent Michigan's largest drunk-driving crash group. Males age 21-34 consistently have both the most HBD crashes resulting in death and serious injury and the highest rates of these crashes.

The good news is that it is just this problem group (males age 21-34) that has experienced the largest reductions in HBD crashes. The bad news is that in order to continue to achieve this decline, we must not only continue what is being done, but increase our efforts to reach new subgroups of this population.

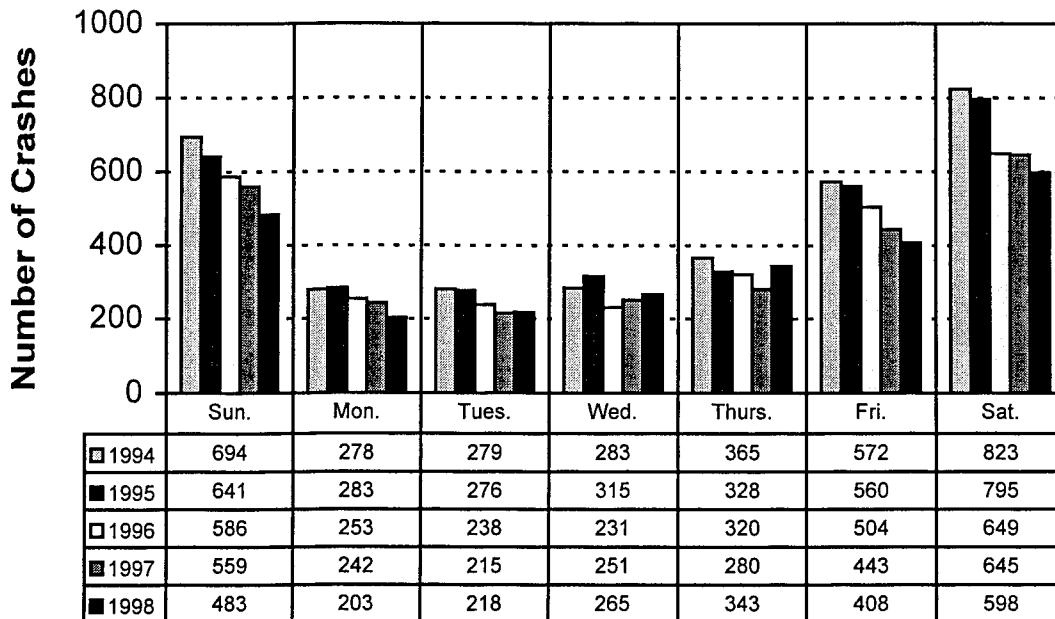
| <b>Fatal or Serious Injury Crash Frequency and Rates<br/> 'Had-Been-Drinking' Crashes<br/> by Year, Age Group, and Sex</b> |            |                    |                              |                                     |   |
|--|------------|--------------------|------------------------------|-------------------------------------|---|
| <i>Age</i>   | <i>Sex</i> | <i>Year</i>        | <i>Number of<br/>Crashes</i> | <i>Rate per 1000<br/>Population</i> | <i>Rate per 1000<br/>Licensed Drivers</i> |
| 35-54 yr   | F          | 94                 | 179                          | 0.133                               | 0.139                                     |
|  |            | 95                 | 215                          | 0.156                               | 0.163                                     |
|  |            | 96                 | 206                          | 0.15                                | 0.156                                     |
|  |            | 97                 | 176                          | 0.123                               | 0.129                                     |
|  |            | 98                 | 196                          | 0.133                               | 0.141                                     |
|  |            | Change<br>94 to 98 | 9.50%                        | 0.00%                               | 1.44%                                     |
|  |            | Change<br>97 to 98 | 11.36%                       | 8.13%                               | 9.30%                                     |
|  | M          | 94                 | 822                          | 0.632                               | 0.652                                     |
|  |            | 95                 | 849                          | 0.635                               | 0.658                                     |
|  |            | 96                 | 763                          | 0.558                               | 0.591                                     |
|  |            | 97                 | 744                          | 0.563                               | 0.555                                     |
|  |            | 98                 | 744                          | 0.52                                | 0.546                                     |
|  |            | Change<br>94 to 98 | -9.49%                       | -17.72%                             | -16.26%                                   |
|  |            | Change<br>97 to 98 | 0.00%                        | -7.64%                              | -1.62%                                    |
| 55-69 yr   | F          | 94                 | 11                           | 0.019                               | 0.021                                     |
|  |            | 95                 | 20                           | 0.034                               | 0.038                                     |
|  |            | 96                 | 8                            | 0.014                               | 0.015                                     |
|  |            | 97                 | 17                           | 0.03                                | 0.031                                     |
|  |            | 98                 | 12                           | 0.02                                | 0.022                                     |
|  |            | Change<br>94 to 98 | 9.09%                        | 5.26%                               | 4.76%                                     |
|  |            | Change<br>97 to 98 | -29.41%                      | -33.33%                             | -29.03%                                   |
|  | M          | 94                 | 100                          | 0.188                               | 0.195                                     |
|  |            | 95                 | 142                          | 0.268                               | 0.276                                     |
|  |            | 96                 | 112                          | 0.212                               | 0.218                                     |
|  |            | 97                 | 117                          | 0.213                               | 0.222                                     |
|  |            | 98                 | 102                          | 0.186                               | 0.189                                     |
|  |            | Change<br>94 to 98 | 2.00%                        | -1.06%                              | -3.08%                                    |
|  |            | Change<br>97 to 98 | -12.82%                      | -12.68%                             | -14.86%                                   |

## Fatal or Serious Injury 'Had-Been Drinking' Crashes by Month and Year



This chart appears to show a phenomenon first described in last year's trend report. That is, the declines that have been observed, particularly in summer and traditional holiday months have begun to taper off, and in some cases reverse themselves (e.g., July, September, and December). This is probably a sign that we have reached those persons whose drinking and driving behavior is relatively easy to modify and we are thus left with the more difficult cases. These persons should be affected by the new repeat offender laws that went into effect October 1999.

## Fatal or Serious Injury 'Had-Been Drinking' Crashes by Day of Week and Year



This chart more clearly shows the declining effect noted in the discussion of the previous chart. Note that while crash frequencies have been declining on the weekend days, these declines have lessened in the last two years. Also note that the number of HBD crashes has remained relatively stable or even slightly increased on weekdays. This also supports the hypothesis that we have reached a point where new efforts will be required to achieve additional gains against alcohol-impaired driving.



# FATAL OR SERIOUS INJURY (KA) CRASHES

## All Drivers

Table 1 - Number and Rate by Year

| Number and Rate of Fatal or Serious Injury Crashes |                   |                          |                                   |                          |                                |
|--|-------------------|--------------------------|-----------------------------------|--------------------------|--------------------------------|
| Year   | Number of Crashes | Rate per 100 Million VMT | Rate per 1000 Registered Vehicles | Rate per 1000 Population | Rate per 1000 Licensed Drivers |
| 94   | 14,762            | 17.325                   | 1.869                             | 1.555                    | 2.236                          |
| 95   | 14,890            | 17.373                   | 1.846                             | 1.559                    | 2.231                          |
| 96   | 13,820            | 15.765                   | 1.673                             | 1.445                    | 2.071                          |
| 97   | 12,843            | 14.393                   | 1.534                             | 1.341                    | 1.881                          |
| 98   | 12,201            | 13.318                   | 1.422                             | 1.243                    | 1.765                          |
| Change 94 to 98                                    | -17.35%           | -23.13%                  | -23.91%                           | -20.06%                  | -21.01%                        |
| Change 97 to 98                                    | -5.00%            | -7.47%                   | -7.30%                            | -7.31%                   | -6.17%                         |

The table above lists the number of crashes in which the most serious injury noted on the police crash report was a fatal injury (Killed) or a serious (A-level) injury (hereafter identified together as KA injuries) along with associated rates as indicated. The last row of the table shows the percent increase or decrease in the indicated measure in the 1-year period 1997 to 1998. For example, in the column titled *Number of Crashes* you can see that the figure in the last row, *Change 97 to 98*, is -5.00%. This means that there were 5 percent fewer KA crashes in 1998 than in 1997. The row just under the double line shows the percent increase or decrease in the indicated measure over the 5-year period 1994 to 1998. For example, in the column titled *Number of Crashes* you can see that the figure in the next-to-last row, *Change 94 to 98*, is -17.35%. This means that there were 17.35 percent fewer KA crashes in 1998 than in 1994.

A word of caution for interpreting the change percentages presented in this and subsequent tables. The 95% confidence band for each percentage reported in this table is  $\pm 7\%$ . What this means is that percentages under 7% in this table are not different than we would have expected given observed year-to-year fluctuations. Using the earlier examples, we can say that there was a statistically significant decline in the number of crashes that occurred between 1994 and 1998 because the decline (17.35%) is greater than 7%. On the other hand, we cannot say that there was a statistically significant decline in the number of crashes that occurred between 1997 and 1998 because the decline (5.00%) is less than 7%.

This table shows that there have been significant declines in KA crashes and crash rates since 1994. It also shows that while the number of KA crashes did not decline significantly between 1997 and 1998, the rate of crashes per VMT, registered vehicle, and population did decline. When we examine the change figures for the number of crashes versus the crash rates, we see that the crash rate figures are 30% to 50% higher than those of the number of crashes. This indicates that significant progress is being achieved because the number of crashes that occur each year is declining faster than the amount of travel or vehicles on the road.

\* It is even higher for all subsequent tables because they are subsets of this table with higher associated variability. The 95% confidence band for all subsequent tables is  $\pm 15\%$ .

Table 2 - Number and Rate by Age, Sex, and Year

| Fatal or Serious Injury Crash Frequency and Rates<br>By Age, Sex, and Year |     |                    |         |                             |                                   |
|--|-----|--------------------|---------|-----------------------------|-----------------------------------|
| Driver Age   | Sex | Year               | Count   | Rate per 1000<br>Population | Rate per 1000<br>Licensed Drivers |
| 16-20 yr   | F   | 94                 | 1,010   | 3.103                       | 3.964                             |
|  |     | 95                 | 1,040   | 3.154                       | 4.001                             |
|  |     | 96                 | 973     | 2.895                       | 3.743                             |
|  |     | 97                 | 881     | 2.272                       | 3.279                             |
|  |     | 98                 | 828     | 2.334                       | 3.03                              |
|  |     | Change<br>94 to 98 | -18.02% | -24.78%                     | -23.56%                           |
|  |     | Change<br>97 to 98 | -6.02%  | 2.73%                       | -7.59%                            |
|  | M   | 94                 | 1,732   | 5.187                       | 6.395                             |
|  |     | 95                 | 1,747   | 5.152                       | 6.374                             |
|  |     | 96                 | 1,594   | 4.548                       | 5.816                             |
|  |     | 97                 | 1,493   | 4.16                        | 5.264                             |
|  |     | 98                 | 1,412   | 3.845                       | 4.913                             |
|  |     | Change<br>94 to 98 | -18.48% | -25.87%                     | -23.17%                           |
|  |     | Change<br>97 to 98 | -5.43%  | -7.57%                      | -6.67%                            |
| 21-34 yr   | F   | 94                 | 1,590   | 1.563                       | 1.686                             |
|  |     | 95                 | 1,557   | 1.557                       | 1.679                             |
|  |     | 96                 | 1,512   | 1.551                       | 1.63                              |
|  |     | 97                 | 1,401   | 1.517                       | 1.562                             |
|  |     | 98                 | 1,141   | 1.188                       | 1.29                              |
|  |     | Change<br>94 to 98 | -28.24% | -23.99%                     | -23.49%                           |
|  |     | Change<br>97 to 98 | -18.56% | -21.69%                     | -17.41%                           |
|  | M   | 94                 | 3,214   | 3.251                       | 3.411                             |
|  |     | 95                 | 3,138   | 3.23                        | 3.377                             |
|  |     | 96                 | 2,805   | 2.945                       | 3.019                             |
|  |     | 97                 | 2,605   | 2.686                       | 2.868                             |
|  |     | 98                 | 2,395   | 2.585                       | 2.657                             |
|  |     | Change<br>94 to 98 | -25.48% | -20.49%                     | -22.10%                           |
|  |     | Change<br>97 to 98 | -8.06%  | -3.76%                      | -7.36%                            |

A word of caution for interpreting the change percentages presented in this and subsequent tables. The 95% confidence band for each percentage reported in this and all subsequent tables is +/-15%. What this means is that percentages under 15% in these tables are not different than we would have expected given observed year-to-year fluctuations.

The data in this table (which continues on the next two pages) show that declines in crashes and crash rates were not distributed evenly across age groups.

In general, the largest reductions were observed in the 21-34 year age group, particularly among females of this age. The smallest changes were observed among drivers age 35-54.

The implications for these data on OHSP program planning are mixed. It appears that programs and policies designed to reduce KA crashes involving drivers less than age 35 have been quite successful. While this is great, it also means that future declines among this large and important market segment may be more difficult to achieve than those in years past.

Table 2 - Number and Rate by Age, Sex, and Year (continued)

| Fatal or Serious Injury Crash Frequency and Rates<br>By Age, Sex, and Year |     |                    |        |                             |                                   |
|--|-----|--------------------|--------|-----------------------------|-----------------------------------|
| Driver Age   | Sex | Year               | Count  | Rate per 1000<br>Population | Rate per 1000<br>Licensed Drivers |
| 35-54 yr   | F   | 94                 | 1,266  | 0.942                       | 0.984                             |
|  |     | 95                 | 1,374  | 0.994                       | 1.042                             |
|  |     | 96                 | 1,340  | 0.973                       | 1.017                             |
|  |     | 97                 | 1,191  | 0.829                       | 0.871                             |
|  |     | 98                 | 1,252  | 0.847                       | 0.901                             |
|  |     | Change<br>94 to 98 | -1.11% | -10.08%                     | -8.43%                            |
|  |     | Change<br>97 to 98 | 5.12%  | 2.17%                       | 3.44%                             |
|  | M   | 94                 | 2,315  | 1.781                       | 1.836                             |
|  |     | 95                 | 2,440  | 1.825                       | 1.89                              |
|  |     | 96                 | 2,243  | 1.641                       | 1.737                             |
|  |     | 97                 | 2,171  | 1.641                       | 1.62                              |
|  |     | 98                 | 2,149  | 1.501                       | 1.576                             |
|  |     | Change<br>94 to 98 | -7.17% | -15.72%                     | -14.16%                           |
|  |     | Change<br>97 to 98 | -1.01% | -8.53%                      | -2.72%                            |
| 55-69 yr   | F   | 94                 | 386    | 0.65                        | 0.737                             |
|  |     | 95                 | 384    | 0.65                        | 0.73                              |
|  |     | 96                 | 343    | 0.582                       | 0.653                             |
|  |     | 97                 | 323    | 0.572                       | 0.597                             |
|  |     | 98                 | 349    | 0.571                       | 0.63                              |
|  |     | Change<br>94 to 98 | -9.59% | -12.15%                     | -14.52%                           |
|  |     | Change<br>97 to 98 | 8.05%  | -0.17%                      | 5.53%                             |
|  | M   | 94                 | 624    | 1.175                       | 1.217                             |
|  |     | 95                 | 675    | 1.272                       | 1.311                             |
|  |     | 96                 | 609    | 1.152                       | 1.183                             |
|  |     | 97                 | 604    | 1.1                         | 1.146                             |
|  |     | 98                 | 588    | 1.071                       | 1.09                              |
|  |     | Change<br>94 to 98 | -5.77% | -8.85%                      | -10.44%                           |
|  |     | Change<br>97 to 98 | -2.65% | -2.64%                      | -4.89%                            |

On the other hand, it would appear from the data that we have had far less success with another significant segment of the market, namely drivers age 35-54. If OHSP's crash goals are to be met, this important segment of the population will need to be reached more effectively than has been the case since 1994.

On the brighter side, there have been two significant traffic-safety policy changes that have occurred or will occur soon that will likely have a major impact on KA crash rates and frequencies. Specifically, Michigan's standard-enforcement safety-belt-use law will go into effect in the spring of 2000 and a set of laws affecting sanctions issued to repeat-offender drunk drivers went into effect fall of 1999. Both of these policy changes should have significant effects in reducing the number and rate of KA crashes among those segments of the driver population where the KA crash problem is most severe.

Table 2 - Number and Rate by Age, Sex, and Year (continued)

| Fatal or Serious Injury Crash Frequency and Rates<br>By Age, Sex, and Year |     |                    |        |                             |                                   |
|--|-----|--------------------|--------|-----------------------------|-----------------------------------|
| Driver Age   | Sex | Year               | Count  | Rate per 1000<br>Population | Rate per 1000<br>Licensed Drivers |
| 70+ yr   | F   | 94                 | 371    | 0.746                       | 1.156                             |
|  |     | 95                 | 330    | 0.654                       | 0.987                             |
|  |     | 96                 | 343    | 0.671                       | 1.026                             |
|  |     | 97                 | 343    | 0.725                       | 0.987                             |
|  |     | 98                 | 347    | 0.65                        | 0.971                             |
|  |     | Change<br>94 to 98 | -6.47% | -12.87%                     | -16.00%                           |
|  |     | Change<br>97 to 98 | 1.17%  | -10.34%                     | -1.62%                            |
|  | M   | 94                 | 475    | 1.524                       | 1.665                             |
|  |     | 95                 | 520    | 1.631                       | 1.756                             |
|  |     | 96                 | 495    | 1.514                       | 1.672                             |
|  |     | 97                 | 460    | 1.712                       | 1.504                             |
|  |     | 98                 | 432    | 1.241                       | 1.367                             |
|  |     | Change<br>94 to 98 | -9.05% | -18.57%                     | -17.90%                           |
|  |     | Change<br>97 to 98 | -6.09% | -27.51%                     | -9.11%                            |

## Fatal or Serious Injury Crashes by Month and Year

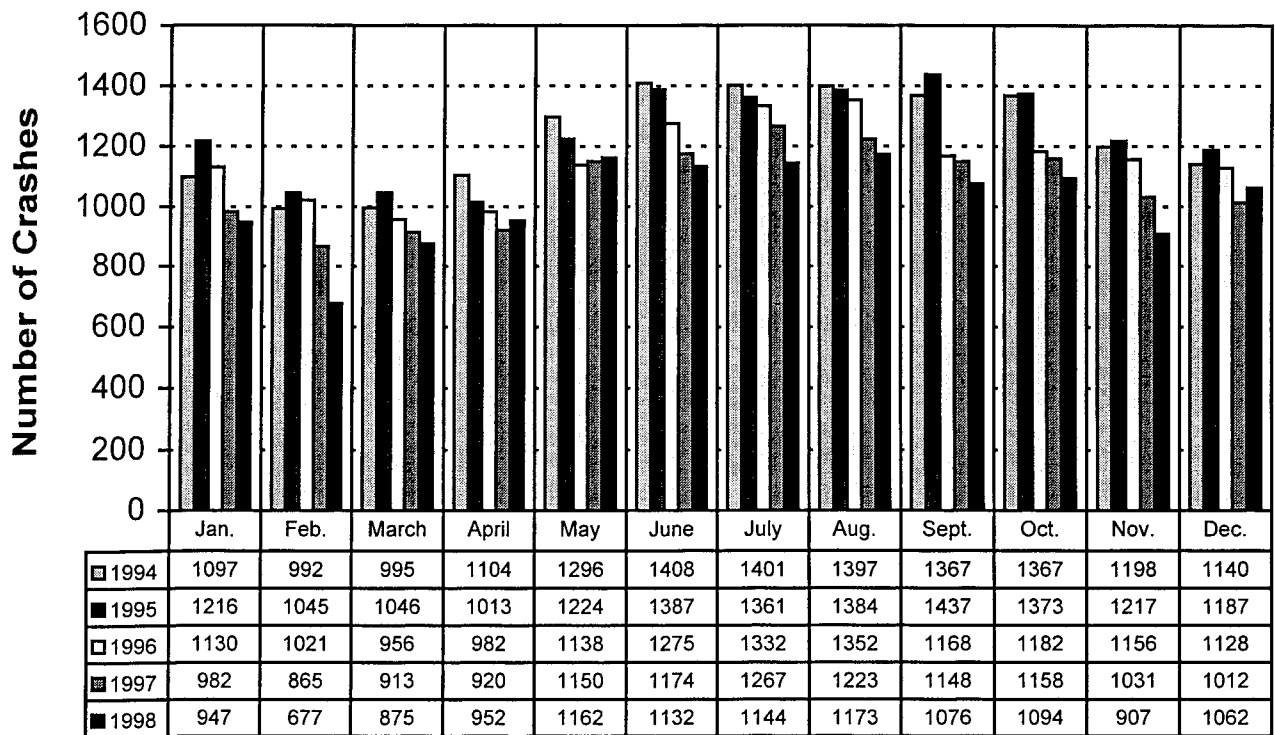


Chart 1 - Number by Month and Year

Based on the data from the preceding chart, it would appear that we may be moving toward a period in which the summer crash experience is only slightly higher than that of most other periods unlike earlier years in which the summer months had by far the greatest KA crash experience. We are also beginning to see that the year-to-year reductions observed since 1994 are generally becoming smaller and have even reversed themselves in a few cases (note especially April, May, and December). These findings would suggest that additional effort may be required to maintain and possibly recover the rate of decline observed in prior years.

## Fatal or Serious Injury Crashes by Day of Week and Year

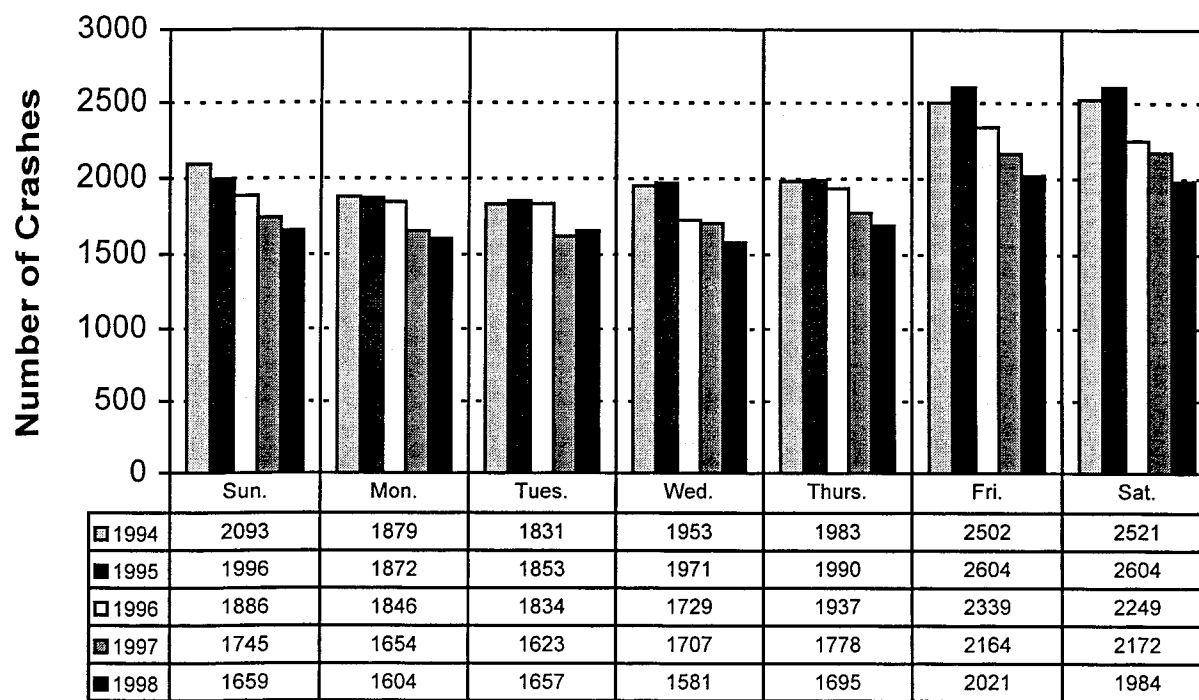


Chart 2 - Number by Day of Week and Year

As was the case when we examined the month-by-month chart on the previous page, in this chart we can see that the rate of year-to-year declines observed each day has gotten smaller in recent years (and reversed itself on Tuesdays). Once again these data point out that significant efforts may be required to maintain the previous levels of decline.

## Fatal or Serious Injury Crashes by Light Condition and Year

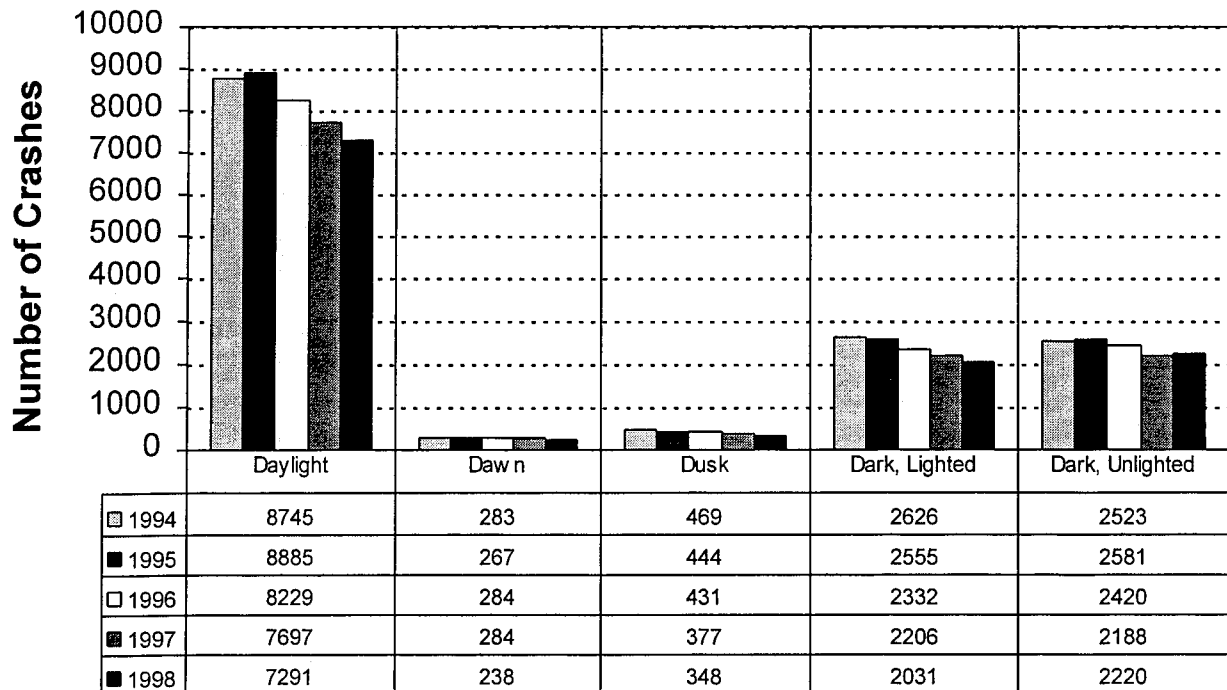


Chart 3 - Number by Light Condition and Year

Declines are observed in each of the lighting categories with the exception of dark, unlighted road segments. Daylight crashes still make up about 70% of all crashes and should remain an important prevention focus. Special programs focusing attention on dark, unlighted road hazards may also be useful.

## Fatal or Serious Injury Crashes by Precipitation and Year

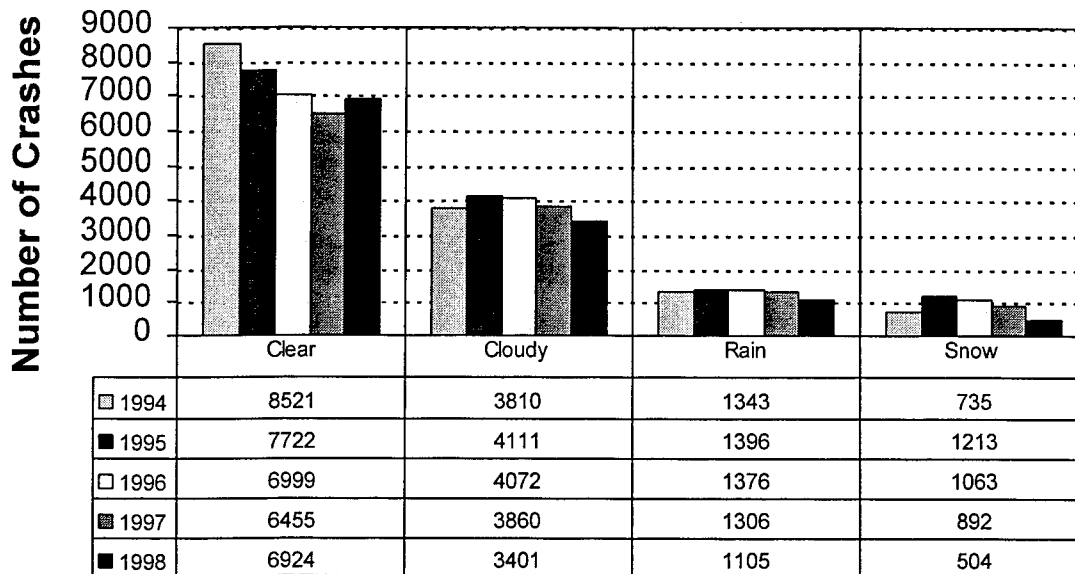


Chart 4 - Number by Precipitation and Year

After three years of decline, KA crashes in clear weather increased from 1997 to 1998. Because there is no good way to know how much travel each year occurred during which weather condition, there is no way to know if this increase is the result of some change in driving or simply the result of better weather. However, the data do make it clear that there is no reason to support a large foul weather crash prevention campaign because rain and snow crashes make up less than 20% of all KA crashes.



## Fatal or Serious Injury Crashes by Highway Class and Year

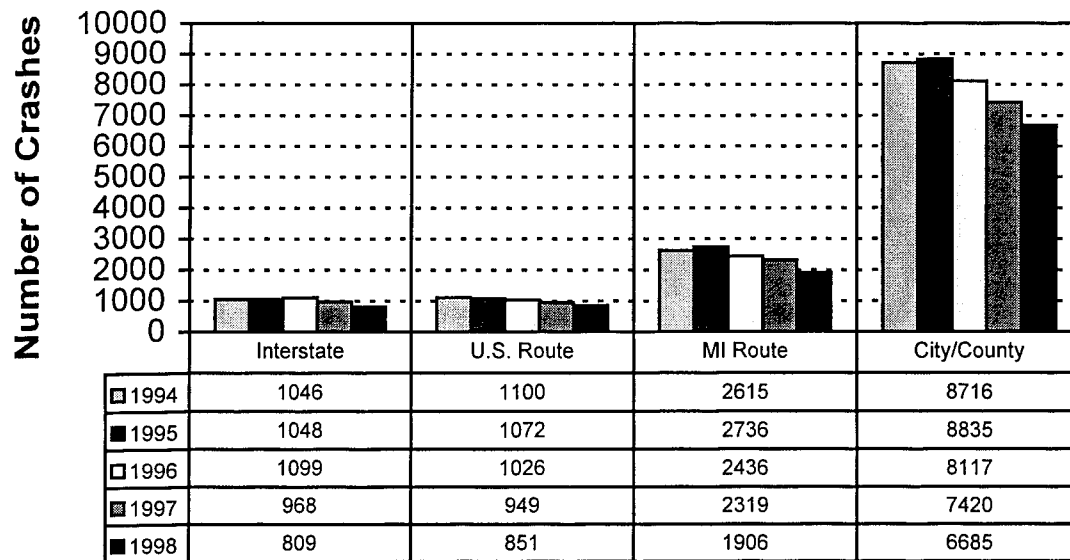


Chart 5 - Number by Highway Class and Year

City/County roads continue to predominate the KA crash picture in Michigan. In order for Michigan to achieve its traffic-safety goals, greater success will be required on these roadways. Note that less than 20% of all crashes occur on interstate or U.S. routes.

## Fatal or Serious Injury Crashes by Speed Limit and Year

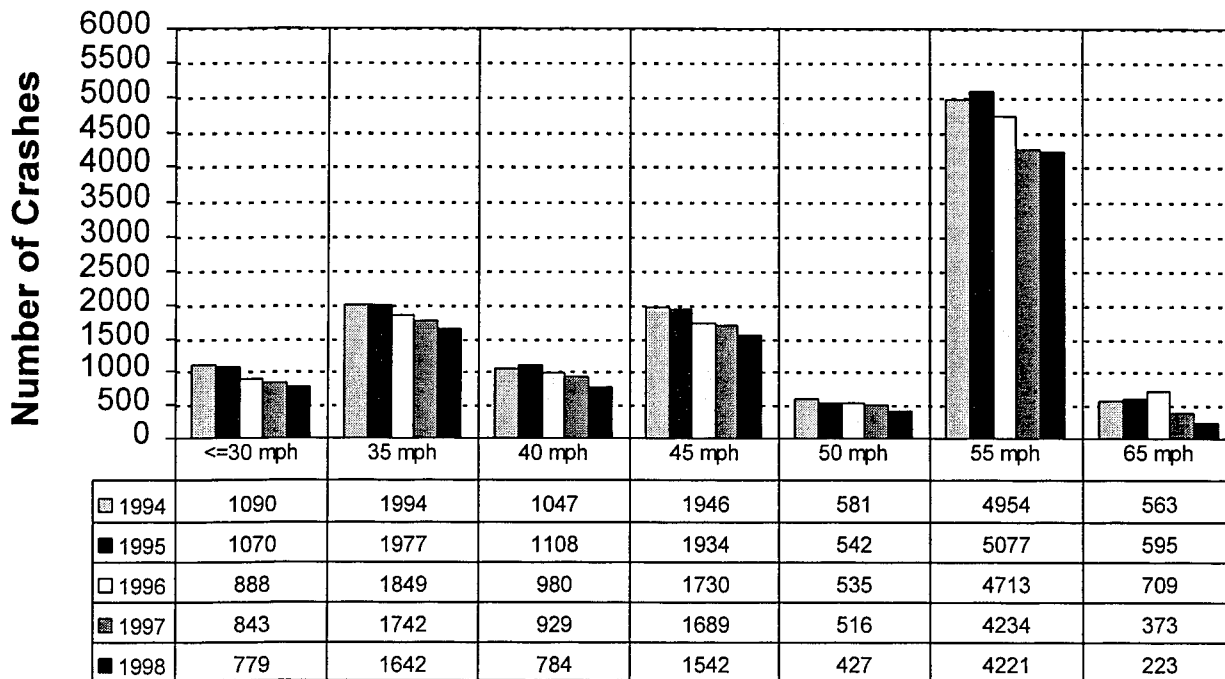


Chart 6 - Number by Speed Limit and Year

This chart shows that roads with a 55 mph speed limit not only make up the largest single category of KA crashes, but also shows the smallest decline from 1997 to 1998. These data would strongly suggest these roads as a focus for immediate attention.

## Fatal or Serious Injury Crashes by Road Surface Condition and Year

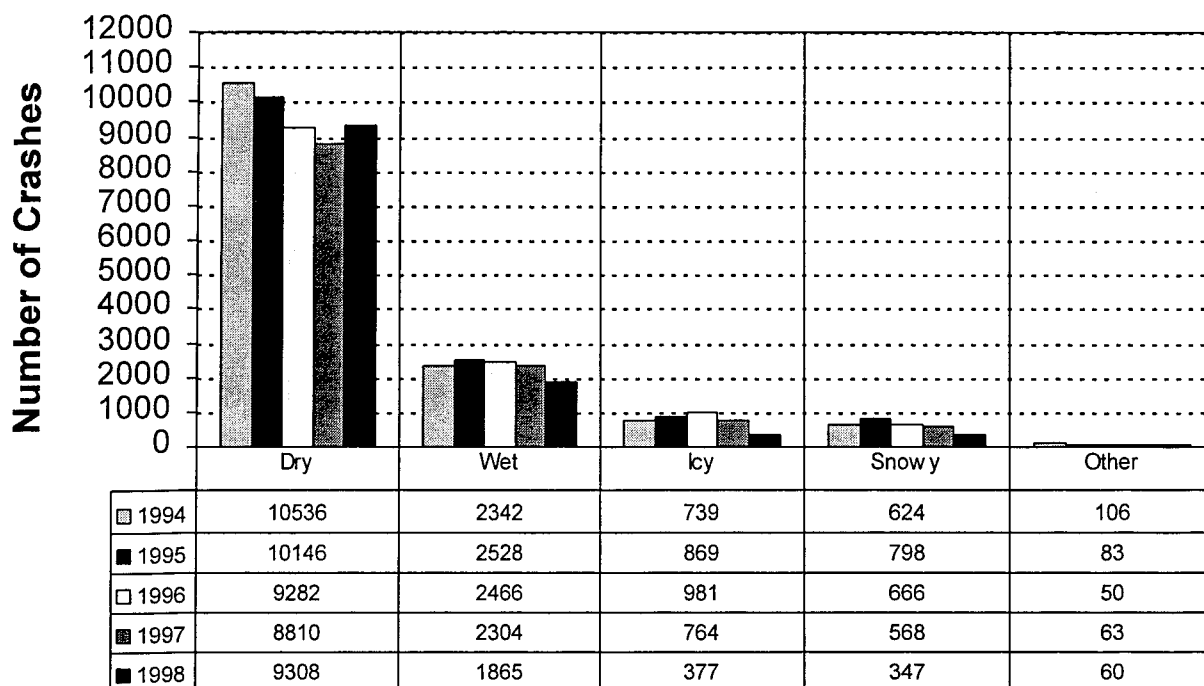


Chart 7 - Number by Road Surface Condition and Year

As was the case with precipitation, we can see that most crashes occur on dry roads. This would suggest little need to focus new efforts on driving on adverse road conditions.



Table 3 - Number by Hazardous Action and Year (Single-Vehicle)

| Number of Vehicles Involved in Single-Vehicle Crashes<br>by Hazardous Action and Year |      |      |                      |                      |                  |                    |              |                   |                     |                      |                  |                    |                     |                   |       |         |
|---|------|------|----------------------|----------------------|------------------|--------------------|--------------|-------------------|---------------------|----------------------|------------------|--------------------|---------------------|-------------------|-------|---------|
|   |      | None | Speed<br>Too<br>Fast | Speed<br>Too<br>Slow | Fail to<br>Yield | Traffic<br>Control | Wrong<br>Way | Left of<br>Center | Improper<br>Passing | Improper<br>Lane Use | Improper<br>Turn | Improper<br>Signal | Improper<br>Backing | Clear<br>Distance | Other | Unknown |
| Number of<br>Vehicles   | 1994 | 492  | 1799                 | 17                   | 7                | 42                 | 8            | 98                | 14                  | 57                   | 9                | 4                  | 4                   | 196               | 1177  | 208     |
|   | 1995 | 494  | 1889                 | 12                   | 20               | 41                 | 4            | 74                | 9                   | 47                   | 6                | 3                  | 5                   | 168               | 1190  | 254     |
|   | 1996 | 476  | 1749                 | 10                   | 23               | 44                 | 3            | 78                | 14                  | 40                   | 4                | 2                  | 3                   | 168               | 1174  | 215     |
|   | 1997 | 446  | 1627                 | 10                   | 15               | 32                 | 2            | 59                | 21                  | 33                   | 6                | 1                  | 0                   | 155               | 1047  | 218     |
|   | 1998 | 410  | 1559                 | 6                    | 20               | 43                 | 5            | 57                | 13                  | 34                   | 11               | 3                  | 7                   | 138               | 1045  | 229     |
|   | 1994 | 0.8% | 37.6%                | 17.7%                | 28.6%            | 28.6%              | 12.5%        | 27.6%             | 64.3%               | 43.9%                | 11.1%            | 25.0%              | 50.0%               | 27.0%             | 35.9% | 6.7%    |
| Proportion of<br>Hazardous<br>Actions Cited   | 1995 | 1.4% | 34.8%                | 50.0%                | 45.0%            | 26.8%              | 0.0%         | 27.0%             | 33.3%               | 48.9%                | 16.7%            | 33.3%              | 20.0%               | 30.4%             | 35.2% | 5.1%    |
|   | 1996 | 0.8% | 34.2%                | 30.0%                | 39.1%            | 27.3%              | 33.3%        | 26.9%             | 42.9%               | 30.0%                | 0.0%             | 0.0%               | 0.0%                | 33.9%             | 36.1% | 5.6%    |
|   | 1997 | 1.1% | 34.2%                | 10.0%                | 46.7%            | 43.8%              | 50.0%        | 28.8%             | 38.1%               | 27.3%                | 16.7%            | 0.0%               | 30.3%               | 31.7%             | 5.1%  | 11.0%   |
|   | 1998 | 0.7% | 34.9%                | 33.3%                | 30.0%            | 25.6%              | 20.0%        | 38.6%             | 61.5%               | 35.3%                | 45.5%            | 33.3%              | 28.6%               | 27.5%             | 32.4% | 4.4%    |
|   |      |      |                      |                      |                  |                    |              |                   |                     |                      |                  |                    |                     |                   |       |         |

The table above shows that, according to the officer completing the crash report, most single-vehicle crashes are the result of excessive speed. However, in only about 35% of these crashes is the driver cited for the hazardous action that precipitated the crash. While it is well understood that in fatal and severe-injury crashes there are often ethical and legal constraints to issuing a citation, increasing the proportion of KA crashes (especially speed-related crashes) in which persons are cited would likely act to impress on persons that safe, legal driving is important and will be strictly enforced.

Table 4 - Number by Hazardous Action and Year (Multiple-Vehicle)

| Number of Vehicles Involved in Multiple-Vehicle Crashes<br>by Hazardous Action and Year |      |       |                   |                   |                  |                    |              |                   |                     |                      |                  |                    |                     |                   |       |         |
|---|------|-------|-------------------|-------------------|------------------|--------------------|--------------|-------------------|---------------------|----------------------|------------------|--------------------|---------------------|-------------------|-------|---------|
|   |      | None  | Speed<br>Too Fast | Speed<br>Too Slow | Fail to<br>Yield | Traffic<br>Control | Wrong<br>Way | Left of<br>Center | Improper<br>Passing | Improper<br>Lane Use | Improper<br>Turn | Improper<br>Signal | Improper<br>Backing | Clear<br>Distance | Other | Unknown |
| Number of<br>Vehicles   | 1994 | 10962 | 923               | 27                | 3182             | 1413               | 79           | 575               | 133                 | 251                  | 270              | 22                 | 57                  | 1736              | 1403  | 467     |
|   | 1995 | 11266 | 1018              | 51                | 3114             | 1401               | 72           | 609               | 129                 | 236                  | 289              | 21                 | 45                  | 1704              | 1476  | 523     |
|   | 1996 | 10371 | 939               | 48                | 2996             | 1350               | 62           | 493               | 144                 | 250                  | 250              | 17                 | 36                  | 1504              | 1344  | 589     |
|   | 1997 | 9784  | 882               | 30                | 2875             | 1267               | 55           | 465               | 105                 | 211                  | 221              | 14                 | 29                  | 1418              | 1228  | 490     |
|   | 1998 | 9118  | 698               | 30                | 2760             | 1184               | 44           | 454               | 110                 | 236                  | 220              | 25                 | 40                  | 1274              | 1240  | 530     |
| Proportion of<br>Hazardous<br>Actions Cited   | 1994 | 0.2%  | 38.2%             | 33.3%             | 55.3%            | 54.8%              | 38.0%        | 36.9%             | 48.9%               | 38.7%                | 48.9%            | 22.7%              | 21.1%               | 50.9%             | 28.8% | 1.7%    |
|   | 1995 | 0.5%  | 37.6%             | 37.3%             | 55.2%            | 53.9%              | 27.8%        | 37.1%             | 51.2%               | 39.8%                | 43.3%            | 23.8%              | 37.8%               | 53.7%             | 27.4% | 1.3%    |
|   | 1996 | 0.4%  | 38.6%             | 41.7%             | 52.3%            | 52.4%              | 19.4%        | 39.8%             | 43.8%               | 38.8%                | 34.8%            | 35.3%              | 27.8%               | 51.2%             | 27.2% | 2.0%    |
|   | 1997 | 0.3%  | 40.0%             | 33.3%             | 53.3%            | 49.2%              | 30.9%        | 36.6%             | 39.1%               | 41.2%                | 42.5%            | 35.7%              | 44.8%               | 52.2%             | 25.2% | 2.2%    |
|   | 1998 | 0.5%  | 38.1%             | 30.0%             | 53.0%            | 49.3%              | 31.8%        | 37.4%             | 51.8%               | 39.8%                | 44.1%            | 40.0%              | 22.5%               | 52.0%             | 25.0% | 1.5%    |

In contrast to single-vehicle crashes in which the most common hazardous action was excessive speed, among multiple-vehicle crashes the most common hazardous action reported by police was "none." Readers should note, however, that these crashes involve multiple vehicles and thus some of the vehicles were innocent bystanders. Among the hazardous actions listed, "failure to yield" had the most cases by 2 to 1 over the next leading action. Note that, like the single-vehicle crashes, hazardous actions in multiple-vehicle crashes are cited by police generally less than half the time they are noted on the crash report form.

Table 5 - Number by Vehicle Type and Year

| Number of Vehicles Involved in KA Injury Crashes by Vehicle Type |      |       |                        |
|--|------|-------|------------------------|
| Vehicle Type   | Year | Count | Rate per 1000 Vehicles |
| Car  | 94   | 17613 | 3.23                   |
|  | 95   | 17732 | 3.21                   |
|  | 96   | 16462 | 2.92                   |
|  | 97   | 15001 | 2.63                   |
|  | 98   | 13791 | 2.39                   |
| Heavy Truck  | 94   | 935   | 8.53                   |
|  | 95   | 885   | 8.07                   |
|  | 96   | 924   | 8.22                   |
|  | 97   | 811   | 7.12                   |
|  | 98   | 788   | 6.89                   |
| Light Truck  | 94   | 324   | 5.26                   |
|  | 95   | 333   | 5.45                   |
|  | 96   | 320   | 5.28                   |
|  | 97   | 319   | 5.32                   |
|  | 98   | 393   | 6.43                   |
| Motorcycle   | 94   | 804   | 6.86                   |
|  | 95   | 725   | 6.09                   |
|  | 96   | 657   | 5.44                   |
|  | 97   | 665   | 5.26                   |
|  | 98   | 718   | 5.19                   |
| Pickup   | 94   | 3348  | 3.02                   |
|  | 95   | 3438  | 2.97                   |
|  | 96   | 3159  | 2.61                   |
|  | 97   | 3095  | 2.46                   |
|  | 98   | 3055  | 2.28                   |
| Van  | 94   | 1555  | 10.18                  |
|  | 95   | 1799  | 11.62                  |
|  | 96   | 1684  | 10.73                  |
|  | 97   | 1573  | 9.89                   |
|  | 98   | 1560  | 9.67                   |

By far the largest vehicle group in this table is passenger cars (almost 10,000 KA crashes more than all other vehicle types combined). For this reason, crashes involving passenger cars should be the central focus of OHSP program efforts. Efforts targeting other vehicle types may well result in declines in KA crashes involving those vehicle types, especially among subgroups of driver types like young males. However, such efforts would not, in all probability, move the state markedly toward the OHSP goals, even if the declines were dramatic.

## Drivers Age 14-18

Table 6 - Number and Rate by Year

| Number and Rate of Fatal or Serious Injury Crashes<br>Drivers Age 14-18 |                              |   |
|---|------------------------------|---|
| <i>Year</i>   | <i>Number of<br/>Crashes</i> | <i>Rate per 1000<br/>Licensed Drivers</i> |
| 94  | 2792                         | 9.48                                      |
| 95  | 2735                         | 9.00                                      |
| 96  | 2513                         | 8.27                                      |
| 97  | 2390                         | 6.79                                      |
| 98  | 2174                         | 6.02                                      |
| <i>Change<br/>94 to 98</i>  | -22.13%                      | -36.50%                                   |
| <i>Change<br/>97 to 98</i>  | -9.04%                       | -11.34%                                   |

This table shows that the number of KA crashes and crash rate declined each year since 1994. Although this is a small subgroup, it remains an important one. As the effects of the relatively new graduated licensing system become more evident as drivers move through the system, it is expected that these numbers will decline rapidly.



Table 7 - Number and Rate by Age, Sex, and Year

| Fatal or Serious Injury Crash Frequency and Rate<br>by Year, Age and Sex<br>Drivers Age 14-18 |            |             |              |   |
|---|------------|-------------|--------------|---|
| <i>Driver Age</i>   | <i>Sex</i> | <i>Year</i> | <i>Count</i> | <i>Rate per 1000<br/>Licensed Drivers</i> |
| 14  | M          | 94          | 153          | 87.13                                     |
|   |            | 95          | 150          | 97.91                                     |
|   |            | 96          | 124          | 80.94                                     |
|   |            | 97          | 116          | 5.49                                      |
|   |            | 98          | 112          | 4.82                                      |
|   | F          | 94          | 85           | 290.10                                    |
|   |            | 95          | 71           | 282.87                                    |
|   |            | 96          | 68           | 270.92                                    |
|   |            | 97          | 67           | 3.21                                      |
|   |            | 98          | 57           | 2.46                                      |
| 16  | M          | 94          | 466          | 11.34                                     |
|   |            | 95          | 459          | 10.68                                     |
|   |            | 96          | 408          | 9.49                                      |
|   |            | 97          | 404          | 9.12                                      |
|   |            | 98          | 289          | 6.04                                      |
|   | F          | 94          | 374          | 9.40                                      |
|   |            | 95          | 347          | 8.31                                      |
|   |            | 96          | 344          | 8.24                                      |
|   |            | 97          | 309          | 7.31                                      |
|   |            | 98          | 250          | 5.32                                      |
| 17  | M          | 94          | 499          | 9.43                                      |
|   |            | 95          | 481          | 9.13                                      |
|   |            | 96          | 447          | 8.48                                      |
|   |            | 97          | 436          | 7.92                                      |
|   |            | 98          | 415          | 7.67                                      |
|   | F          | 94          | 331          | 6.60                                      |
|   |            | 95          | 304          | 5.96                                      |
|   |            | 96          | 301          | 5.90                                      |
|   |            | 97          | 274          | 5.18                                      |
|   |            | 98          | 291          | 5.62                                      |
| 18  | M          | 94          | 543          | 9.68                                      |
|   |            | 95          | 532          | 9.08                                      |
|   |            | 96          | 475          | 8.11                                      |
|   |            | 97          | 443          | 7.49                                      |
|   |            | 98          | 469          | 7.96                                      |
|   | F          | 94          | 283          | 5.40                                      |
|   |            | 95          | 328          | 5.96                                      |
|   |            | 96          | 302          | 5.49                                      |
|   |            | 97          | 297          | 5.28                                      |
|   |            | 98          | 270          | 4.86                                      |

While the data in this table are interesting, the effects of the graduated licensing system are likely to change these numbers and rates in the next few years. Program efforts should probably target greater compliance with the graduated licensing law and practice driving until the new law's effects are better known.

## Fatal or Serious Injury Crashes by Month and Year - Drivers Age 14-18

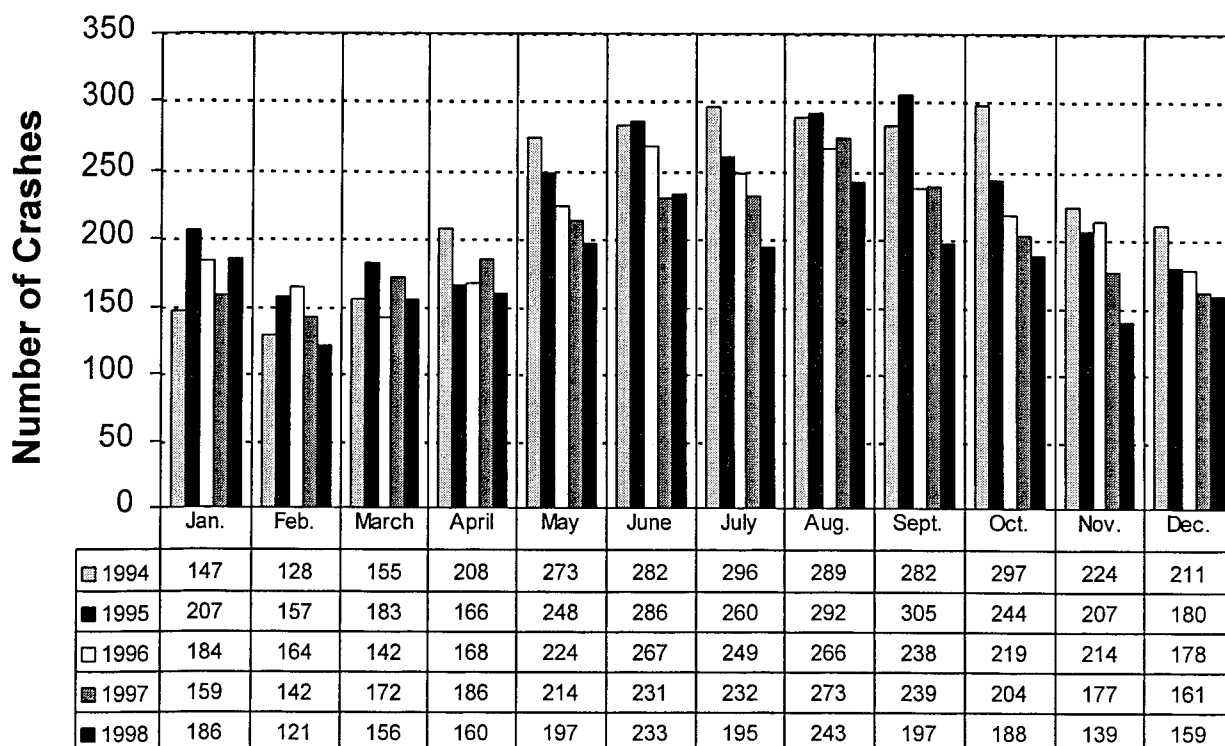


Chart 8 - Number by Month and Year

This chart shows that among this age group of drivers, declines were highest in the summer months and lowest during the spring and December. This would suggest a continuation of program activities in the summer months to maintain the positive change and a reemphasis of programs in the spring and December.

## Fatal or Serious Injury Crashes by Day of Week and Year - Drivers Age 14-18

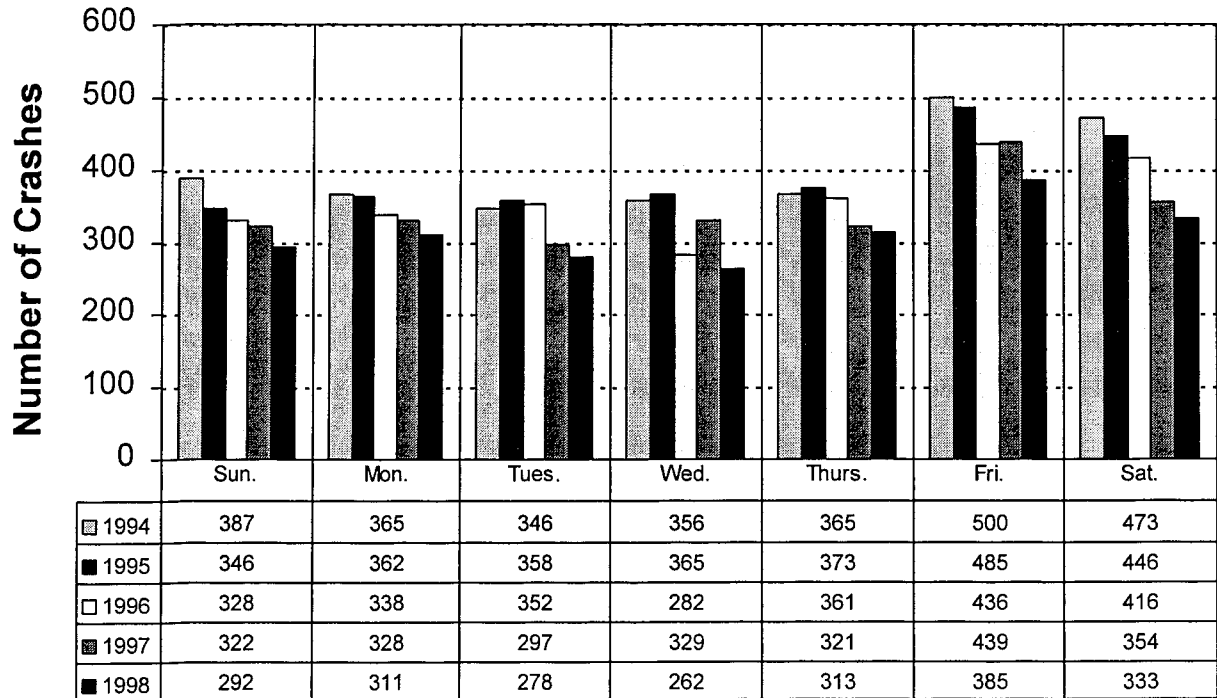


Chart 9 - Number by Day of Week and Year

Declines were observed for each day of the week, with the smallest declines occurring on Monday and Thursday.

## Fatal or Serious Injury Crashes by Light Condition and Year - Drivers Age 14-18

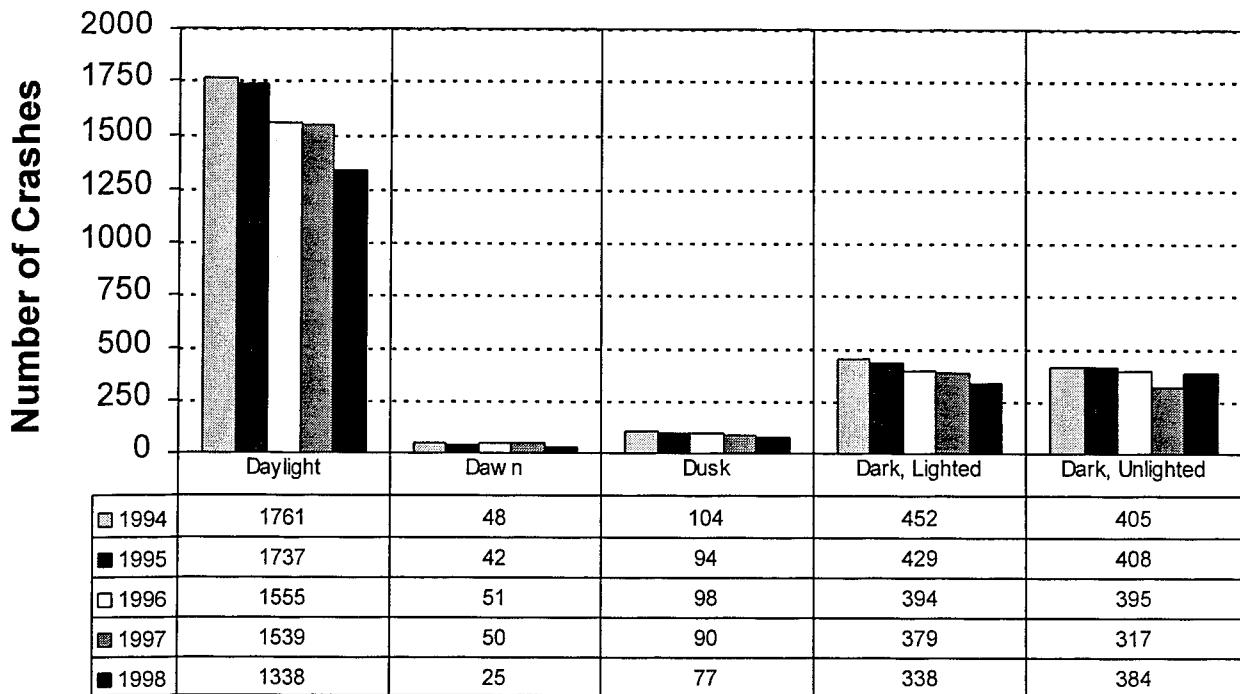


Chart 10 - Number by Light Condition and Year

Most crashes occurred during daylight. The number of crashes in darkness has remained a small proportion of crashes, but fairly constant over the years.

## Fatal or Serious Injury Crashes by Precipitation and Year - Drivers Age 14-18

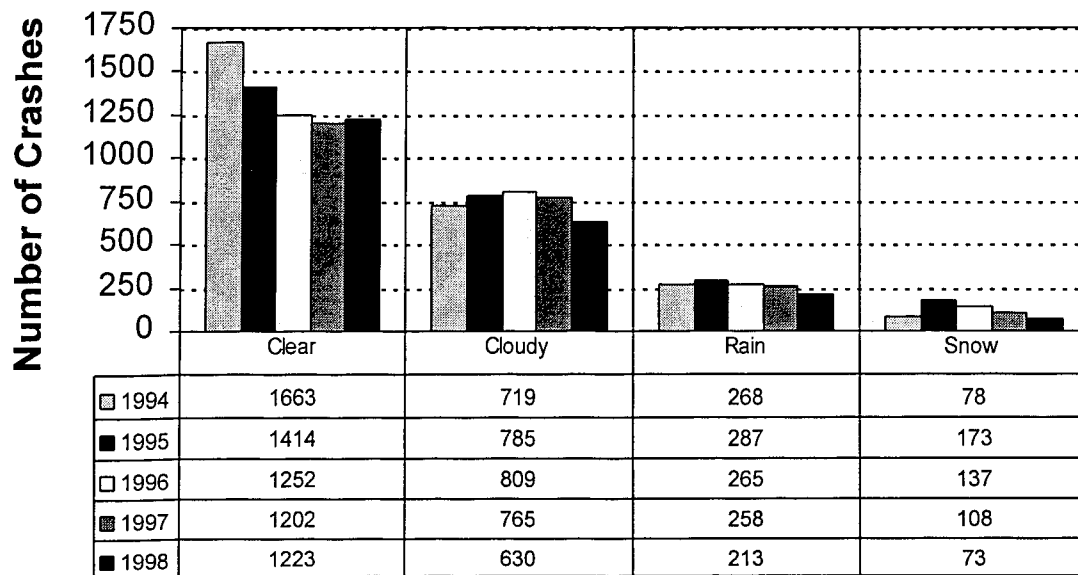


Chart 11 - Number by Precipitation and Year

This table provides no evidence that precipitation conditions are causing a significant problem for this group.

## Fatal or Serious Injury Crashes by Highway Class and Year - Drivers Age 14-18

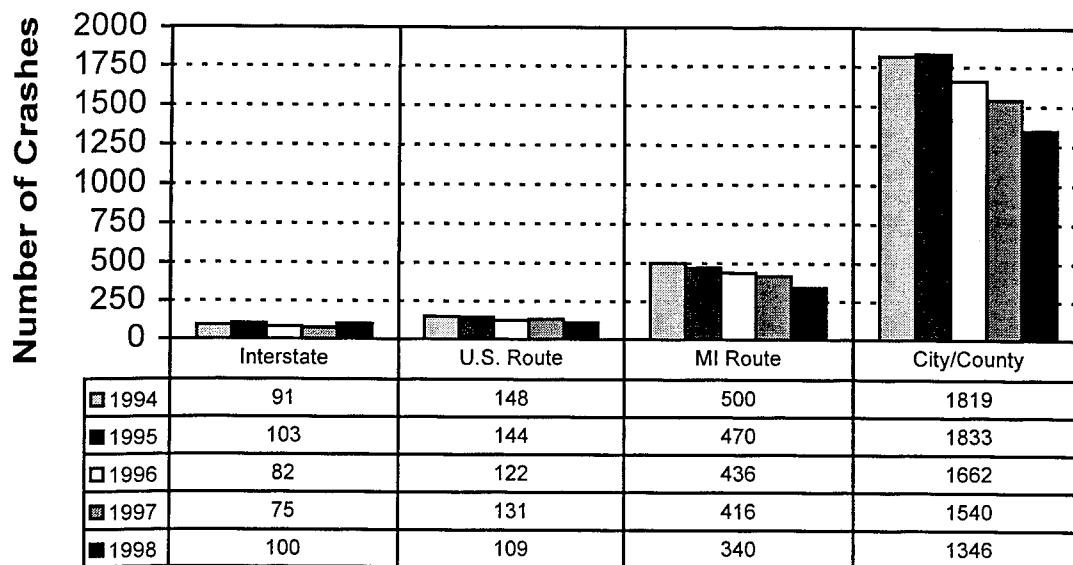


Chart 12 - Number by Highway Class and Year

If drivers age 14-18 were the focus of a program, this chart shows that the program should concentrate on driving on city/county roads.

## Fatal or Serious Injury Crashes by Speed Limit and Year - Drivers Age 14-18

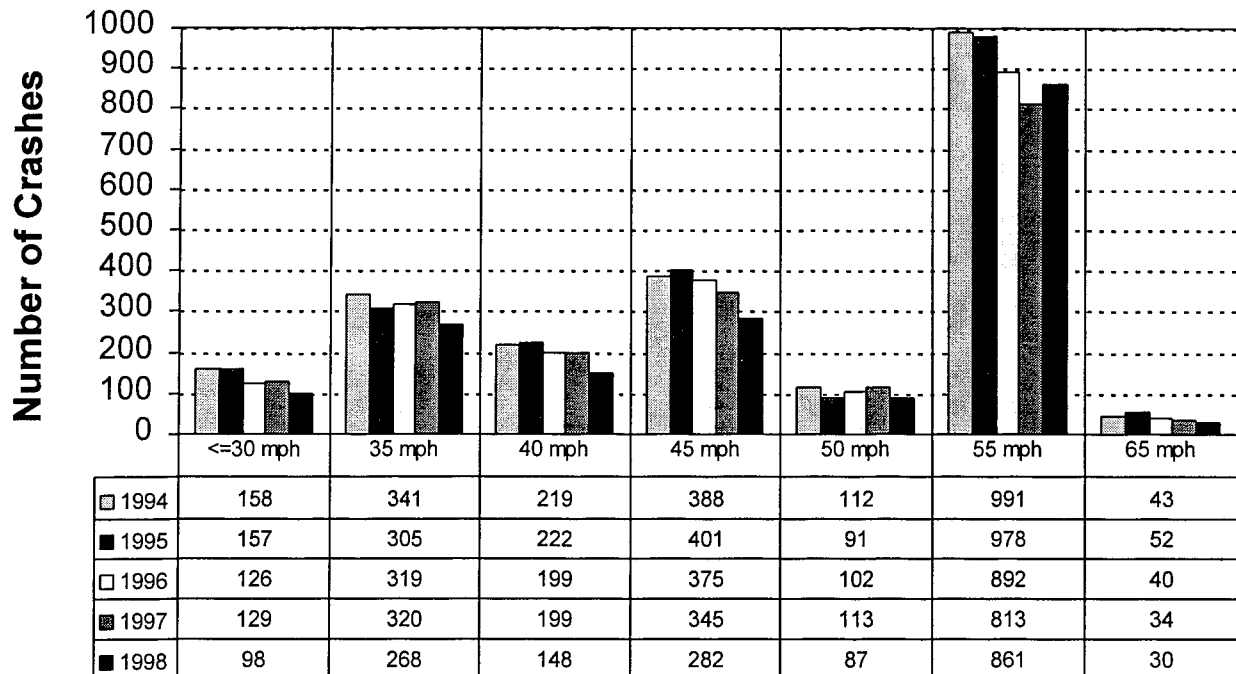


Chart 13 - Number by Speed Limit and Year

KA crashes among drivers age 14-18 are mostly on roads with a 55 mph speed limit. Indeed, 1998 observed the first increase in the number of crashes on 55 mph roads among drivers age 14-18 since before 1994.

## Fatal or Serious Injury Crashes by Road Surface Condition and Year - Drivers Age 14-18

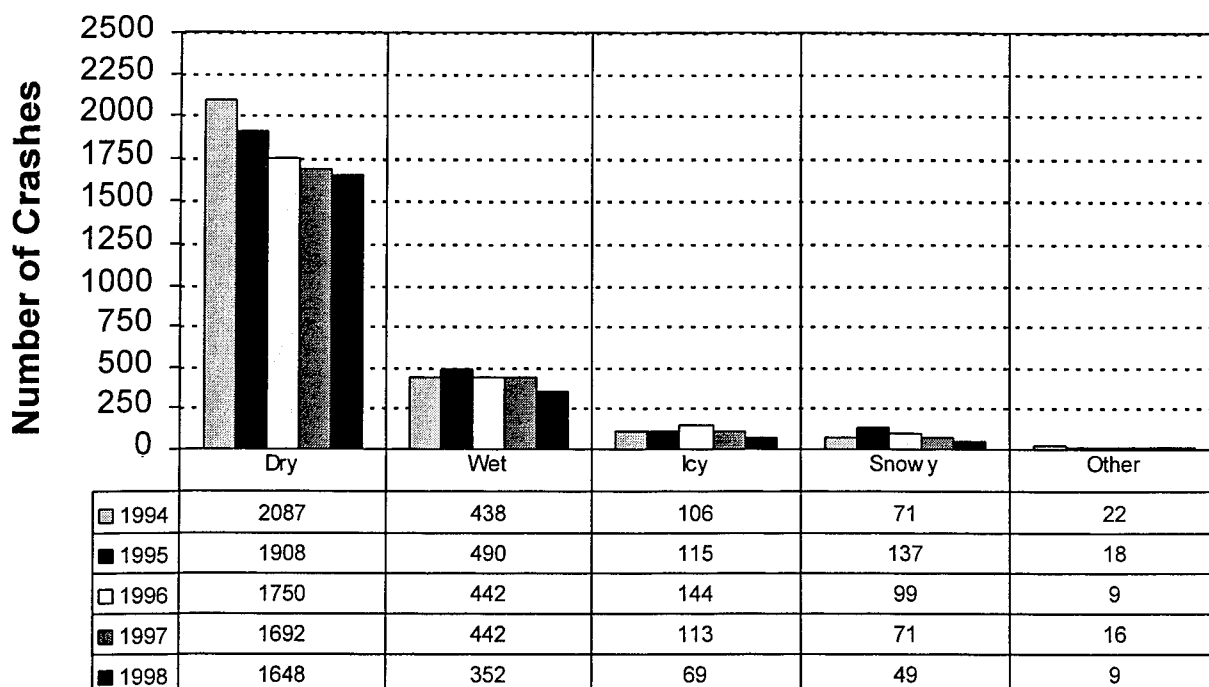


Chart 14 - Number by Road Surface Condition and Year

This chart provides no evidence that any given road condition is a special problem among drivers age 14-18.





Table 9 - Number by Hazardous Action and Year (Multiple-Vehicle)

| Number of Vehicles Involved in Multiple-Vehicle Crashes<br>by Hazardous Action and Year<br>Drivers Age 14-18 |      |      |                   |                   |                  |                    |              |                   |                     |                      |                  |                    |                     |                   |       |         |
|--|------|------|-------------------|-------------------|------------------|--------------------|--------------|-------------------|---------------------|----------------------|------------------|--------------------|---------------------|-------------------|-------|---------|
|  |      | None | Speed<br>Too Fast | Speed<br>Too Slow | Fail to<br>Yield | Traffic<br>Control | Wrong<br>Way | Left of<br>Center | Improper<br>Passing | Improper<br>Lane Use | Improper<br>Turn | Improper<br>Signal | Improper<br>Backing | Clear<br>Distance | Other | Unknown |
| Number of<br>Vehicles  | 1994 | 744  | 142               | 5                 | 502              | 203                | 9            | 66                | 23                  | 30                   | 31               | 5                  | 7                   | 211               | 147   | 36      |
|  | 1995 | 739  | 157               | 8                 | 485              | 192                | 6            | 75                | 14                  | 15                   | 32               | 1                  | 4                   | 219               | 183   | 33      |
|  | 1996 | 693  | 145               | 7                 | 479              | 163                | 8            | 67                | 22                  | 25                   | 27               | 2                  | 2                   | 158               | 151   | 47      |
|  | 1997 | 692  | 131               | 2                 | 450              | 184                | 7            | 69                | 12                  | 24                   | 27               | 1                  | 2                   | 190               | 125   | 34      |
|  | 1998 | 610  | 92                | 4                 | 403              | 140                | 2            | 51                | 21                  | 21                   | 35               | 1                  | 4                   | 141               | 144   | 49      |
| Proportion<br>of<br>Hazardous<br>Actions<br>Cited  | 1994 | 0.1% | 47.9%             | 80.0%             | 61.8%            | 64.5%              | 22.2%        | 43.9%             | 69.6%               | 56.7%                | 61.3%            | 20.0%              | 14.3%               | 61.6%             | 26.5% | 5.6%    |
|  | 1995 | 0.8% | 41.4%             | 37.5%             | 63.5%            | 67.7%              | 0.0%         | 53.3%             | 78.6%               | 53.3%                | 50.0%            | 0.0%               | 50.0%               | 63.0%             | 30.6% | 3.0%    |
|  | 1996 | 0.7% | 49.7%             | 57.1%             | 57.0%            | 65.6%              | 12.5%        | 52.2%             | 54.6%               | 36.0%                | 48.2%            | 0.0%               | 100.0%              | 63.9%             | 35.1% | 2.1%    |
|  | 1997 | 0.4% | 44.3%             | 0.0%              | 58.7%            | 59.2%              | 14.3%        | 42.0%             | 33.3%               | 37.5%                | 48.2%            | 0.0%               | 50.0%               | 64.2%             | 31.2% | 0.0%    |
|  | 1998 | 0.2% | 50.0%             | 25.0%             | 59.6%            | 56.4%              | 0.0%         | 52.9%             | 57.1%               | 33.3%                | 48.6%            | 0.0%               | 75.0%               | 61.0%             | 35.4% | 0.0%    |

In multiple-vehicle crashes, when a hazardous action is noted by the police officer, drivers age 14-18 are most often noted for failure to yield.

Table 10 - Number by Vehicle Type and Year

| Number of Vehicles Involved in KA Injury Crashes by<br>Vehicle Type<br>Drivers Age 14-18 |             |              |
|--|-------------|--------------|
| <i>Vehicle Type</i>  | <i>Year</i> | <i>Count</i> |
| <i>Car</i>   | 94          | 2191         |
|  | 95          | 2164         |
|  | 96          | 1945         |
|  | 97          | 1841         |
|  | 98          | 1644         |
| <i>Heavy Truck</i>   | 94          | 5            |
|  | 95          | 1            |
|  | 96          | 2            |
|  | 97          | 4            |
|  | 98          | 2            |
| <i>Light Truck</i>   | 94          | 21           |
|  | 95          | 19           |
|  | 96          | 23           |
|  | 97          | 23           |
|  | 98          | 27           |
| <i>Motorcycle</i>  | 94          | 62           |
|  | 95          | 49           |
|  | 96          | 44           |
|  | 97          | 43           |
|  | 98          | 43           |
| <i>Pickup</i>  | 94          | 306          |
|  | 95          | 305          |
|  | 96          | 309          |
|  | 97          | 297          |
|  | 98          | 283          |
| <i>Van</i>   | 94          | 78           |
|  | 95          | 78           |
|  | 96          | 86           |
|  | 97          | 94           |
|  | 98          | 74           |

In KA crashes, most drivers age 14-18 are driving a passenger car. The next most common vehicle is the pickup truck. This appears unlikely to change in the near future.

## Drivers Age 70+

Table 11 - Number and Rate by Year

| Number and Rate of Fatal or Serious Injury Crashes<br>Drivers age 70+ |                              |   |
|---|------------------------------|---|
| <i>Year</i>   | <i>Number of<br/>Crashes</i> | <i>Rate per 1000<br/>Licensed Drivers</i> |
| 94  | 1,290                        | 2.13                                      |
| 95  | 1,348                        | 2.14                                      |
| 96  | 1,333                        | 2.11                                      |
| 97  | 1,234                        | 1.89                                      |
| 98  | 1,221                        | 1.81                                      |
| <i>Change<br/>94 to 98</i>  | -5.35%                       | -15.02%                                   |
| <i>Change<br/>97 to 98</i>  | -1.06%                       | -4.23%                                    |

This is a small but growing subpopulation which does not appear to have an overwhelming KA crash problem at the moment. However, because this group is growing in size, it should be carefully monitored.

Table 12 - Number and Rate by Age, Sex, and Year

| <b>Fatal or Serious Injury Crash Frequency and Rate<br/>by Year, Age and Sex<br/>Drivers Age 70+</b> |            |             |              |   |
|--|------------|-------------|--------------|---|
| <i>Driver<br/>Age</i>  | <i>Sex</i> | <i>Year</i> | <i>Count</i> | <i>Rate per 1000<br/>Licensed Drivers</i> |
| 70-74  | F          | 94          | 226          | 1.59                                      |
|  |            | 95          | 203          | 1.40                                      |
|  |            | 96          | 185          | 1.28                                      |
|  |            | 97          | 181          | 1.25                                      |
|  |            | 98          | 159          | 1.09                                      |
|  | M          | 94          | 256          | 1.97                                      |
|  |            | 95          | 306          | 2.31                                      |
|  |            | 96          | 303          | 2.28                                      |
|  |            | 97          | 258          | 1.93                                      |
|  |            | 98          | 236          | 1.75                                      |
| 75-79  | F          | 94          | 165          | 1.66                                      |
|  |            | 95          | 166          | 1.61                                      |
|  |            | 96          | 181          | 1.75                                      |
|  |            | 97          | 161          | 1.47                                      |
|  |            | 98          | 168          | 1.50                                      |
|  | M          | 94          | 228          | 2.66                                      |
|  |            | 95          | 246          | 2.76                                      |
|  |            | 96          | 219          | 2.46                                      |
|  |            | 97          | 215          | 2.29                                      |
|  |            | 98          | 229          | 2.36                                      |
| 80-84  | F          | 94          | 109          | 2.00                                      |
|  |            | 95          | 92           | 1.57                                      |
|  |            | 96          | 118          | 2.01                                      |
|  |            | 97          | 107          | 1.70                                      |
|  |            | 98          | 132          | 1.98                                      |
|  | M          | 94          | 155          | 3.31                                      |
|  |            | 95          | 164          | 3.30                                      |
|  |            | 96          | 168          | 3.38                                      |
|  |            | 97          | 138          | 2.65                                      |
|  |            | 98          | 130          | 2.34                                      |

Table 13 - Number and Rate by Age, Sex, and Year (continued)

| <b>Fatal or Serious Injury Crash Frequency and Rate<br/>by Year, Age and Sex<br/>Drivers Age 70+</b> |            |             |              |   |
|--|------------|-------------|--------------|---|
| <i>Driver<br/>Age</i>  | <i>Sex</i> | <i>Year</i> | <i>Count</i> | <i>Rate per 1000<br/>Licensed Drivers</i> |
| 85-89  | F          | 94          | 41           | 2.03                                      |
|  |            | 95          | 50           | 2.22                                      |
|  |            | 96          | 31           | 1.37                                      |
|  |            | 97          | 49           | 1.98                                      |
|  |            | 98          | 44           | 1.69                                      |
|  | M          | 94          | 69           | 3.88                                      |
|  |            | 95          | 70           | 3.63                                      |
|  |            | 96          | 60           | 3.11                                      |
|  |            | 97          | 72           | 3.50                                      |
|  |            | 98          | 66           | 2.98                                      |
| 90-94  | F          | 94          | 8            | 2.13                                      |
|  |            | 95          | 7            | 1.53                                      |
|  |            | 96          | 7            | 1.53                                      |
|  |            | 97          | 10           | 1.88                                      |
|  |            | 98          | 16           | 2.83                                      |
|  | M          | 94          | 13           | 3.06                                      |
|  |            | 95          | 20           | 4.09                                      |
|  |            | 96          | 20           | 4.09                                      |
|  |            | 97          | 14           | 2.77                                      |
|  |            | 98          | 21           | 3.89                                      |
| 95+  | F          | 94          | 0            | 0.00                                      |
|  |            | 95          | 0            | 0.00                                      |
|  |            | 96          | 1            | 2.53                                      |
|  |            | 97          | 2            | 4.51                                      |
|  |            | 98          | 0            | 0.00                                      |
|  | M          | 94          | 0            | 0.00                                      |
|  |            | 95          | 2            | 3.57                                      |
|  |            | 96          | 4            | 7.14                                      |
|  |            | 97          | 2            | 3.16                                      |
|  |            | 98          | 0            | 0.00                                      |

## Fatal or Serious Injury Crashes by Month and Year - Drivers Age 70+

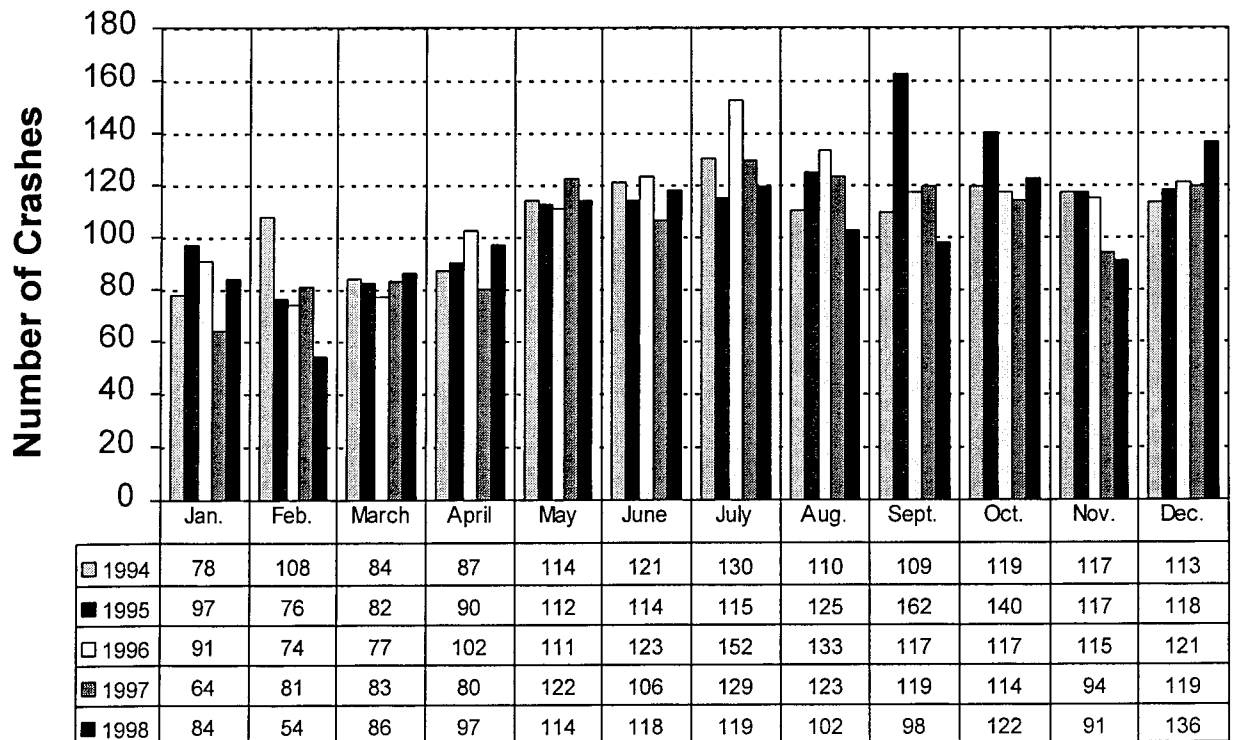


Chart 15 - Number by Month and Year

KA crash incidence among drivers age 70+ appear to cluster in the May-July period, and seem to change little from year-to-year for most months. It should also be noted that crash frequencies have generally increased from 1994 levels in the months of March, April, and December.

## Fatal or Serious Injury Crashes by Day of Week and Year - Drivers Age 70+

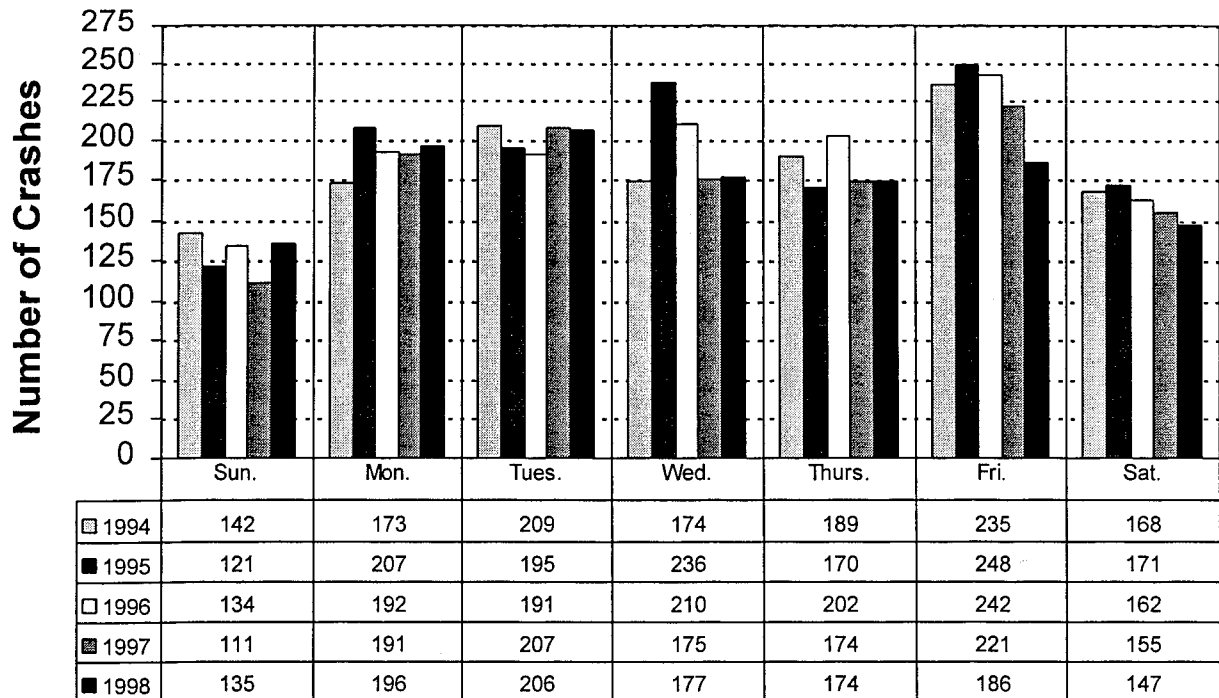


Chart 16 - Number by Day of Week

Crashes appear to have declined on weekends, but remain steady during weekdays.



## Fatal or Serious Injury Crashes by Light Condition and Year - Drivers Age 70+

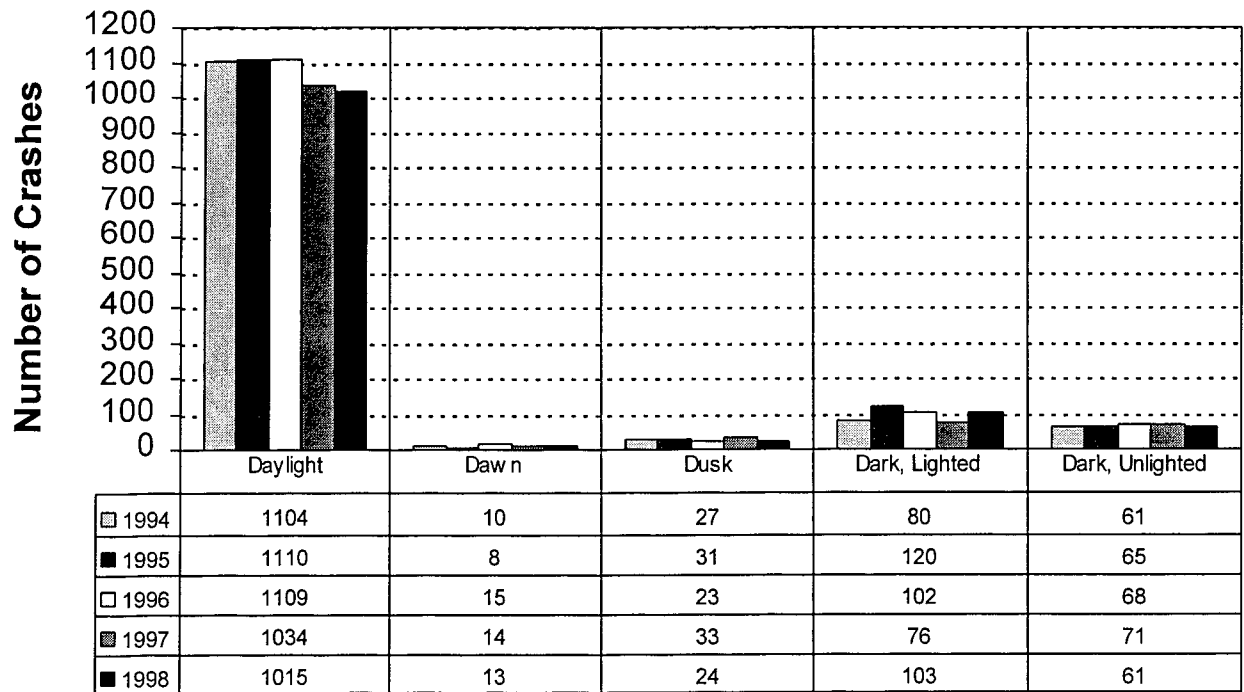


Chart 17 - Number by Light Condition and Year

Daylight is the light condition during which the vast majority of crashes occur for drivers age 70+.

## Fatal or Serious Injury Crashes by Precipitation and Year - Drivers Age 70+

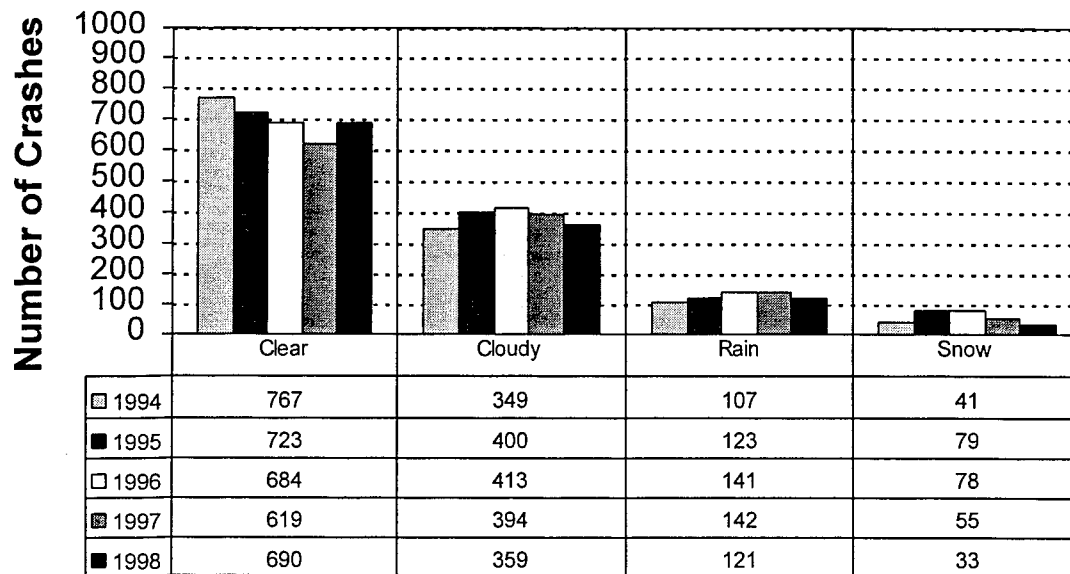


Chart 18 - Number by Precipitation and Year

There is no evidence of needed concern for drivers age 70+ with respect to precipitation.

## Fatal or Serious Injury Crashes by Highway Class and Year - Drivers Age 70+

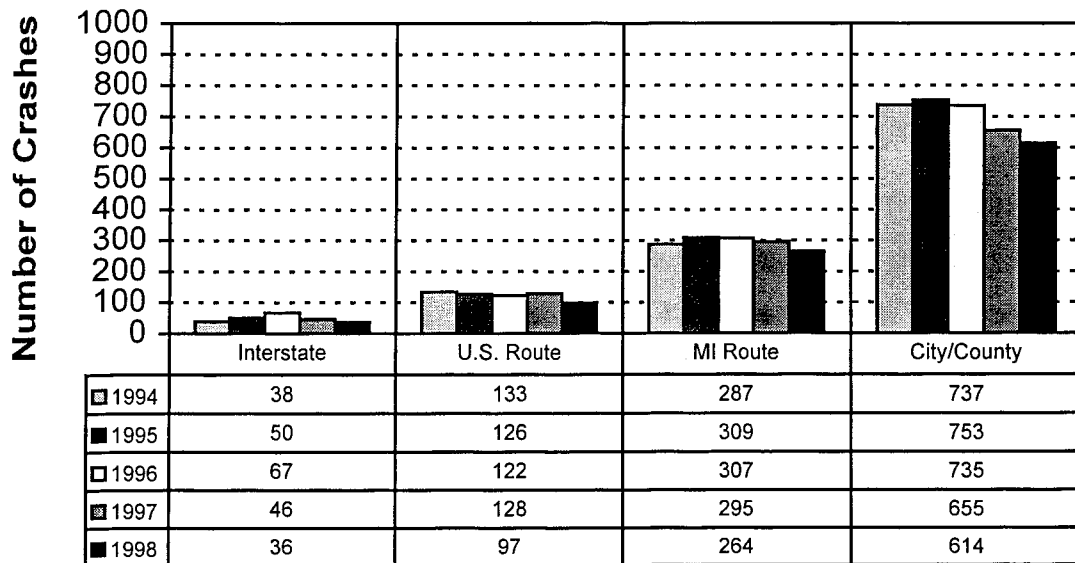


Chart 19 - Number by Highway Class and Year

While most crashes involving drivers age 70+ occur on city/county roads, a greater proportion of crashes involving drivers in this age group occur on Michigan routes and U.S. routes than for the other age groups examined.

## Fatal or Serious Injury Crashes by Speed Limit and Year - Drivers Age 70+

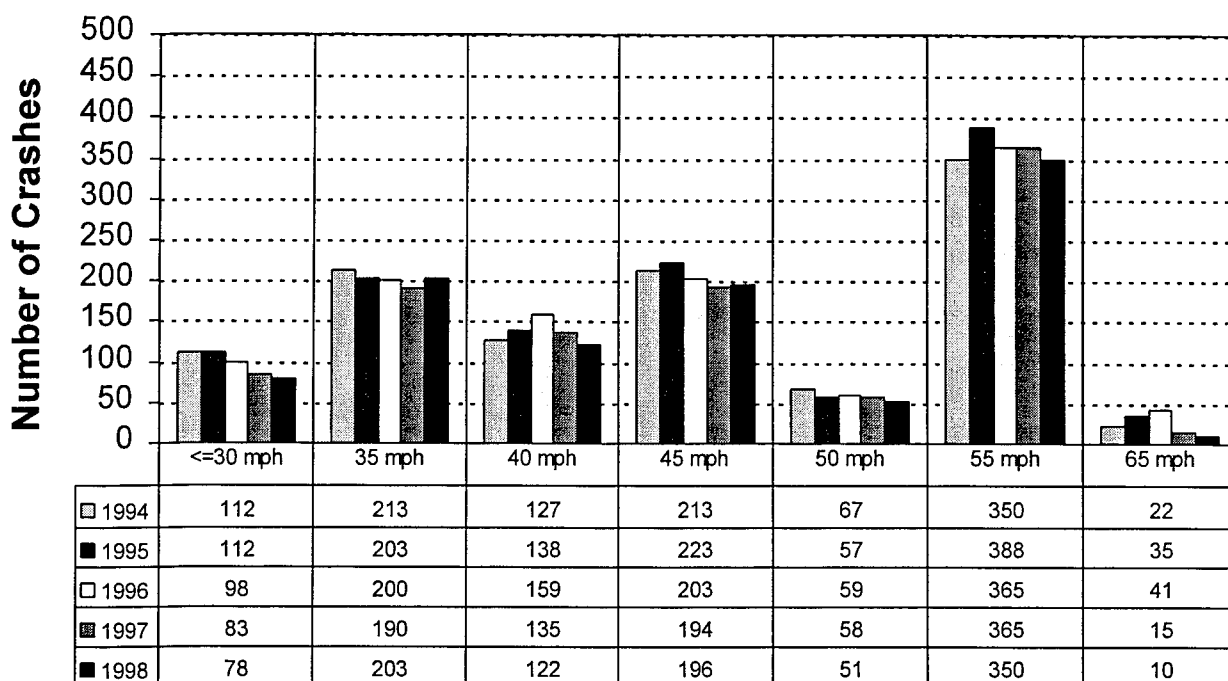


Chart 20 - Number by Speed Limit and Year

The pattern of KA crashes by speed limit among drivers age 70+ differs little from that of drivers of other age groups.

## Fatal or Serious Injury Crashes by Road Surface Condition and Year - Drivers Age 70+

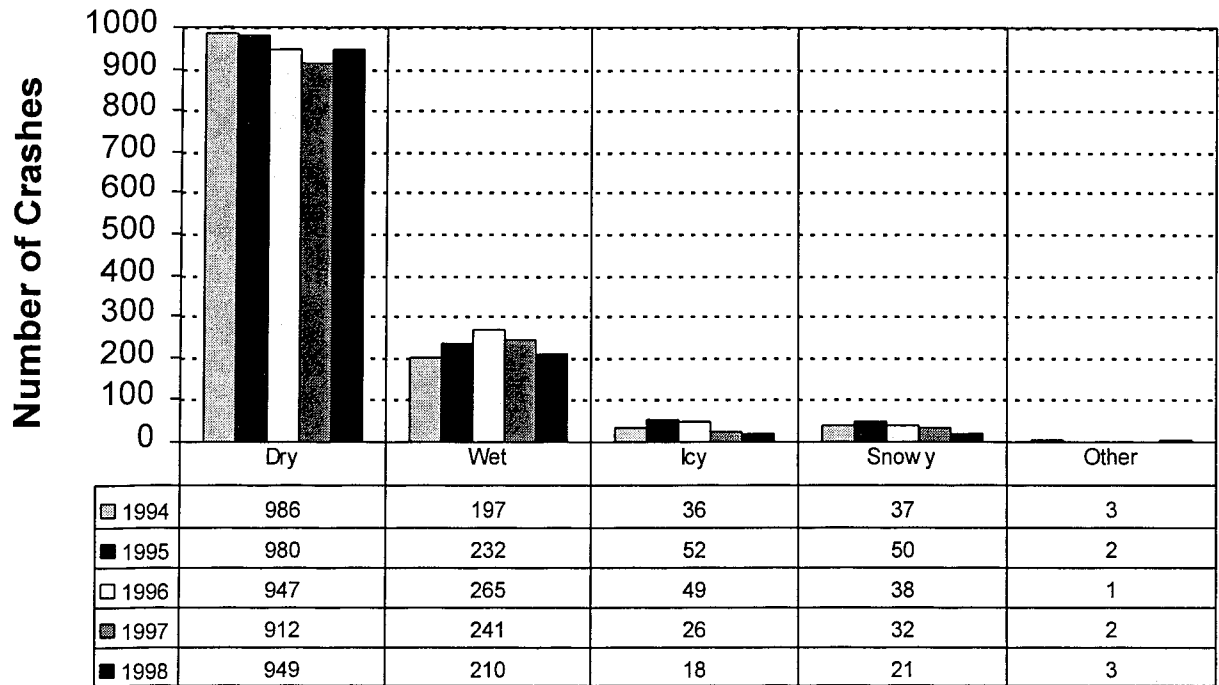


Chart 21 - Number by Road Surface Condition and Year

As was the case for the other driver subgroups, most crashes involving drivers age 70+ occur on dry roads.

Table 14 - Number by Hazardous Action and Year (Single-Vehicle)

| Number of Vehicles Involved in Single-Vehicle Crashes<br>by Hazardous Action and Year<br>Drivers Age 70+ |      |      |                   |                   |                  |                    |                   |                      |                  |                     |                   |       |         |
|--|------|------|-------------------|-------------------|------------------|--------------------|-------------------|----------------------|------------------|---------------------|-------------------|-------|---------|
|  |      | None | Speed<br>Too Fast | Speed<br>Too Slow | Fail to<br>Yield | Traffic<br>Control | Left of<br>Center | Improper<br>Lane Use | Improper<br>Turn | Improper<br>Backing | Clear<br>Distance | Other | Unknown |
| Number of<br>Vehicles  | 1994 | 24   | 25                | 1                 | 0                | 0                  | 8                 | 4                    | 0                | 0                   | 7                 | 38    | 12      |
|  | 1995 | 22   | 29                | 0                 | 1                | 0                  | 6                 | 1                    | 1                | 1                   | 13                | 46    | 16      |
|  | 1996 | 21   | 38                | 0                 | 0                | 2                  | 4                 | 3                    | 0                | 1                   | 8                 | 43    | 11      |
|  | 1997 | 19   | 34                | 0                 | 1                | 3                  | 4                 | 3                    | 0                | 0                   | 5                 | 44    | 9       |
|  | 1998 | 11   | 37                | 0                 | 1                | 4                  | 2                 | 1                    | 0                | 0                   | 4                 | 44    | 15      |
| Proportion of<br>Hazardous<br>Actions Cited  | 1994 | 0.0% | 20.0%             | 0.0%              | NA               | NA                 | 12.5%             | 0.0%                 | NA               | NA                  | 14.3%             | 10.5% | 0.0%    |
|  | 1995 | 0.0% | 17.2%             | NA                | 0.0%             | NA                 | 50.0%             | 0.0%                 | 0.0%             | 0.0%                | 7.7%              | 19.6% | 0.0%    |
|  | 1996 | 0.0% | 26.3%             | NA                | NA               | 0.0%               | 25.0%             | 0.0%                 | NA               | 0.0%                | 0.0%              | 20.9% | 9.1%    |
|  | 1997 | 0.0% | 32.4%             | NA                | 100.0%           | 33.3%              | 25.0%             | 0.0%                 | NA               | NA                  | 20.0%             | 13.6% | 0.0%    |
|  | 1998 | 0.0% | 18.9%             | NA                | 0.0%             | 25.0%              | 50.0%             | 0.0%                 | NA               | NA                  | 0.0%              | 11.4% | 0.0%    |

Unlike the other age groups, KA crashes among drivers age 70+ are not predominated by excessive speed. Indeed, the largest group for drivers of this age is other.

Table 15 - Number by Hazardous Action and Year (Multiple-Vehicle)

| Number of Vehicles Involved in Multiple-Vehicle Crashes<br>by Hazardous Action and Year<br>Drivers Age 70+ |      |      |                   |                   |                  |                    |              |                   |                     |                      |                  |                    |                     |                   |       |         |
|--|------|------|-------------------|-------------------|------------------|--------------------|--------------|-------------------|---------------------|----------------------|------------------|--------------------|---------------------|-------------------|-------|---------|
|  |      | None | Speed<br>Too Fast | Speed<br>Too Slow | Fail to<br>Yield | Traffic<br>Control | Wrong<br>Way | Left of<br>Center | Improper<br>Passing | Improper<br>Lane Use | Improper<br>Turn | Improper<br>Signal | Improper<br>Backing | Clear<br>Distance | Other | Unknown |
| Number of<br>Vehicles  | 1994 | 379  | 15                | 2                 | 386              | 109                | 4            | 31                | 3                   | 16                   | 32               | 2                  | 3                   | 87                | 72    | 24      |
|  | 1995 | 446  | 20                | 5                 | 390              | 102                | 7            | 29                | 3                   | 13                   | 34               | 3                  | 5                   | 93                | 45    | 22      |
|  | 1996 | 440  | 26                | 5                 | 346              | 101                | 4            | 29                | 5                   | 26                   | 31               | 1                  | 2                   | 79                | 75    | 29      |
|  | 1997 | 396  | 19                | 4                 | 367              | 91                 | 6            | 29                | 1                   | 13                   | 23               | 1                  | 3                   | 93                | 65    | 24      |
|  | 1998 | 388  | 10                | 2                 | 367              | 108                | 1            | 29                | 3                   | 13                   | 24               | 0                  | 0                   | 87                | 65    | 26      |
|  | 1994 | 0.3% | 40.0%             | 0.0%              | 52.3%            | 58.7%              | 75.0%        | 29.0%             | 0.0%                | 50.0%                | 56.3%            | 50.0%              | 33.3%               | 48.3%             | 19.4% | 4.2%    |
| Proportion of<br>Hazardous<br>Actions Cited  | 1995 | 0.7% | 45.0%             | 20.0%             | 53.6%            | 50.0%              | 14.3%        | 34.5%             | 0.0%                | 38.5%                | 55.9%            | 33.3%              | 20.0%               | 44.1%             | 24.4% | 0.0%    |
|  | 1996 | 0.5% | 30.8%             | 0.0%              | 48.0%            | 58.4%              | 0.0%         | 55.2%             | 40.0%               | 42.3%                | 51.6%            | 100.0%             | 50.0%               | 44.3%             | 26.7% | 0.0%    |
|  | 1997 | 0.0% | 26.3%             | 75.0%             | 49.1%            | 53.9%              | 33.3%        | 31.0%             | 100.0%              | 69.2%                | 39.1%            | 0.0%               | 66.7%               | 46.2%             | 23.1% | 0.0%    |
|  | 1998 | 0.3% | 30.0%             | 100.0%            | 50.7%            | 46.3%              | 100.0%       | 37.9%             | 66.7%               | 30.8%                | 54.2%            | NA                 | NA                  | 40.2%             | 15.4% | 0.0%    |

In another departure from the other age groups in which the largest category here was *None* by a wide margin, *Failure to Yield* is mentioned almost as often as *None* among drivers age 70+ involved in multiple-vehicle crashes.

Table 16 - Number by Vehicle Type and Year

| Number of Vehicles Involved in KA Injury Crashes by<br>Vehicle Type<br>Drivers Age 70+ |             |              |
|--|-------------|--------------|
| <i>Vehicle Type</i>  | <i>Year</i> | <i>Count</i> |
| <i>Car</i>   | 94          | 1082         |
|  | 95          | 1124         |
|  | 96          | 1130         |
|  | 97          | 1026         |
|  | 98          | 992          |
| <i>Heavy Truck</i>   | 94          | 1            |
|  | 95          | 5            |
|  | 96          | 2            |
|  | 97          | 6            |
|  | 98          | 3            |
| <i>Light Truck</i>   | 94          | 7            |
|  | 95          | 12           |
|  | 96          | 4            |
|  | 97          | 7            |
|  | 98          | 12           |
| <i>Motorcycle</i>  | 93          | 1            |
|  | 94          | 2            |
|  | 95          | 5            |
|  | 96          | 0            |
|  | 97          | 4            |
| <i>Pickup</i>  | 94          | 104          |
|  | 95          | 103          |
|  | 96          | 97           |
|  | 97          | 85           |
|  | 98          | 97           |
| <i>Van</i>   | 94          | 50           |
|  | 95          | 54           |
|  | 96          | 53           |
|  | 97          | 67           |
|  | 98          | 65           |

Among drivers age 70+ involved in KA crashes, the vehicle most often used (by far) is the passenger car.



# KA INJURED OCCUPANTS

## All Drivers

Table 17 - Number and Rate by Occupant Position and Year

| Number and Rate of Occupants with Fatal or Serious Injuries by Occupant Position and Year |      |                                |                          |
|---|------|--------------------------------|--------------------------|
| Occupant Position   | Year | Number of KA Injured Occupants | Rate per 1000 Population |
| Driver  | 94   | 11,489                         | 1.210                    |
|   | 95   | 11,723                         | 1.228                    |
|   | 96   | 10,988                         | 1.149                    |
|   | 97   | 10,028                         | 1.047                    |
|   | 98   | 9,357                          | 0.953                    |
| Front Center  | 94   | 212                            | 0.022                    |
|   | 95   | 183                            | 0.019                    |
|   | 96   | 152                            | 0.016                    |
|   | 97   | 159                            | 0.017                    |
|   | 98   | 113                            | 0.012                    |
| Front Right   | 94   | 3,459                          | 0.364                    |
|   | 95   | 3,423                          | 0.359                    |
|   | 96   | 3,154                          | 0.330                    |
|   | 97   | 2,937                          | 0.307                    |
|   | 98   | 2,671                          | 0.272                    |
| Rear Center   | 94   | 204                            | 0.022                    |
|   | 95   | 199                            | 0.021                    |
|   | 96   | 171                            | 0.018                    |
|   | 97   | 195                            | 0.020                    |
|   | 98   | 169                            | 0.017                    |
| Rear Left   | 94   | 489                            | 0.052                    |
|   | 95   | 457                            | 0.048                    |
|   | 96   | 419                            | 0.044                    |
|   | 97   | 386                            | 0.040                    |
|   | 98   | 413                            | 0.042                    |
| Rear Right  | 94   | 574                            | 0.061                    |
|   | 95   | 536                            | 0.056                    |
|   | 96   | 474                            | 0.050                    |
|   | 97   | 425                            | 0.044                    |
|   | 98   | 413                            | 0.042                    |

The majority of occupants that experience fatal or serious injury are drivers and front-right passengers. Clearly for OHSP to achieve its traffic-safety goals, the emphasis should be on the behavior of the driver first and the right-front passenger second.

To put the numbers in perspective, it would require only a 5% reduction in the number of drivers that experience KA injury to provide the same change toward achieving the statewide goal as preventing 100% of the KA injuries among rear-right occupants.

However, we must keep in mind that the occupants of these two seating positions (driver and rear-right) represent two different populations (i.e., drivers are adults, rear-right occupants are generally children or older adults). Therefore, any set of activities that focuses on the driver to the exclusion of the others could result in an entire market segment being left out of the programming mix.

Table 18 - Number and Rate Among Pedestrians and Bicyclists

| <b>Number and Rate of Fatal or Serious Injuries<br/>Among Pedestrians and Bicyclists</b> |             |                                  |                                 |
|--|-------------|----------------------------------|---------------------------------|
|  | <i>Year</i> | <i>Number of KA<br/>Injuries</i> | <i>Rate per 100K Population</i> |
| <i>Bike</i>  | 94          | 467                              | 4.920                           |
|  | 95          | 427                              | 4.472                           |
|  | 96          | 397                              | 4.151                           |
|  | 97          | 389                              | 4.062                           |
|  | 98          | 375                              | 3.820                           |
| <i>Pedestrian</i>  | 94          | 1210                             | 12.748                          |
|  | 95          | 1271                             | 13.310                          |
|  | 96          | 1189                             | 12.432                          |
|  | 97          | 1073                             | 11.205                          |
|  | 98          | 1084                             | 11.042                          |

This table shows that pedestrian crashes outnumber bicycle crashes by 3 to 1. More importantly, note that the number of pedestrian KA injuries in 1998 (1,084) is actually slightly larger than that for KA injuries experienced in the rear seat of motor vehicles (995). This pattern holds true for each year examined. When considering program resources, we should keep in mind that KA crash injuries to pedestrians are as numerous as those to rear-seat occupants.

Table 19 - Number by Age, Sex, and Occupant Type

| Number of Occupants with Fatal or Serious Injuries<br>By Age, Gender, and Occupant Type |     |      |                              |             |            |
|---|-----|------|------------------------------|-------------|------------|
| Occupant<br>Age   | Sex | Year | Number of KA Injured Persons |             |            |
|   |     |      | Occupants                    | Pedestrians | Bicyclists |
| 0 yr  | F   | 94   | 5                            | 1           | 0          |
|   |     | 95   | 11                           | 3           | 0          |
|   |     | 96   | 20                           | 1           | 0          |
|   |     | 97   | 12                           | 0           | 0          |
|   |     | 98   | 7                            | 0           | 0          |
|   | M   | 94   | 22                           | 1           | 0          |
|   |     | 95   | 18                           | 1           | 0          |
|   |     | 96   | 16                           | 1           | 0          |
|   |     | 97   | 15                           | 0           | 0          |
|   |     | 98   | 11                           | 1           | 0          |
| 1 yr  | F   | 94   | 16                           | 7           | 0          |
|   |     | 95   | 11                           | 4           | 0          |
|   |     | 96   | 15                           | 4           | 0          |
|   |     | 97   | 6                            | 3           | 0          |
|   |     | 98   | 16                           | 4           | 0          |
|   | M   | 94   | 20                           | 3           | 0          |
|   |     | 95   | 18                           | 3           | 0          |
|   |     | 96   | 24                           | 2           | 0          |
|   |     | 97   | 6                            | 2           | 0          |
|   |     | 98   | 10                           | 4           | 0          |
| 2 yr  | F   | 94   | 22                           | 6           | 0          |
|   |     | 95   | 23                           | 4           | 0          |
|   |     | 96   | 23                           | 8           | 0          |
|   |     | 97   | 10                           | 3           | 0          |
|   |     | 98   | 18                           | 3           | 0          |
|   | M   | 94   | 24                           | 6           | 0          |
|   |     | 95   | 32                           | 12          | 0          |
|   |     | 96   | 22                           | 6           | 0          |
|   |     | 97   | 17                           | 6           | 0          |
|   |     | 98   | 16                           | 7           | 1          |
| 3 yr  | F   | 94   | 25                           | 5           | 0          |
|   |     | 95   | 30                           | 9           | 0          |
|   |     | 96   | 24                           | 9           | 0          |
|   |     | 97   | 19                           | 1           | 0          |
|   |     | 98   | 18                           | 5           | 0          |
|   | M   | 94   | 30                           | 9           | 2          |
|   |     | 95   | 42                           | 11          | 1          |
|   |     | 96   | 39                           | 8           | 0          |
|   |     | 97   | 27                           | 7           | 0          |
|   |     | 98   | 19                           | 11          | 3          |

The data in this table show that the most likely targets for OHSP programming should be persons age 16-54. The highest concentration of KA injuries within this subgroup is among persons age 21-34.

Table 20 - Number by Age, Sex, and Occupant Type (continued)

| Number of Occupants with Fatal or Serious Injuries<br>by Age, Gender, and Occupant Type |     |      |                              |             |            |
|---|-----|------|------------------------------|-------------|------------|
| Occupant<br>Age   | Sex | Year | Number of KA Injured Persons |             |            |
|   |     |      | Occupants                    | Pedestrians | Bicyclists |
| 4 yr  | F   | 94   | 36                           | 7           | 1          |
|   |     | 95   | 33                           | 4           | 1          |
|   |     | 96   | 36                           | 9           | 1          |
|   |     | 97   | 19                           | 5           | 0          |
|   |     | 98   | 19                           | 3           | 1          |
|   | M   | 94   | 35                           | 10          | 1          |
|   |     | 95   | 24                           | 13          | 2          |
|   |     | 96   | 33                           | 12          | 6          |
|   |     | 97   | 22                           | 13          | 2          |
|   |     | 98   | 20                           | 8           | 4          |
| 5-9 yr  | F   | 94   | 118                          | 46          | 15         |
|   |     | 95   | 148                          | 51          | 23         |
|   |     | 96   | 134                          | 45          | 9          |
|   |     | 97   | 105                          | 37          | 16         |
|   |     | 98   | 141                          | 47          | 10         |
|   | M   | 94   | 170                          | 79          | 66         |
|   |     | 95   | 173                          | 82          | 45         |
|   |     | 96   | 131                          | 98          | 42         |
|   |     | 97   | 120                          | 77          | 52         |
|   |     | 98   | 151                          | 65          | 44         |
| 10-15 yr  | F   | 94   | 442                          | 71          | 43         |
|   |     | 95   | 421                          | 86          | 33         |
|   |     | 96   | 346                          | 66          | 35         |
|   |     | 97   | 308                          | 66          | 22         |
|   |     | 98   | 278                          | 61          | 21         |
|   | M   | 94   | 411                          | 104         | 125        |
|   |     | 95   | 387                          | 93          | 112        |
|   |     | 96   | 343                          | 86          | 115        |
|   |     | 97   | 255                          | 94          | 95         |
|   |     | 98   | 302                          | 76          | 94         |
| 16-20 yr  | F   | 94   | 1431                         | 36          | 7          |
|   |     | 95   | 1401                         | 27          | 15         |
|   |     | 96   | 1368                         | 41          | 5          |
|   |     | 97   | 1167                         | 37          | 6          |
|   |     | 98   | 1102                         | 44          | 11         |
|   | M   | 94   | 1725                         | 71          | 33         |
|   |     | 95   | 1621                         | 62          | 36         |
|   |     | 96   | 1564                         | 57          | 22         |
|   |     | 97   | 1305                         | 71          | 38         |
|   |     | 98   | 1315                         | 61          | 24         |

Table 21 - Number by Age, Sex, and Occupant Type (continued)

| Number of Occupants with Fatal or Serious Injuries<br>By Age, Gender, and Occupant Type |     |      |                              |             |            |
|---|-----|------|------------------------------|-------------|------------|
| Occupant<br>Age   | Sex | Year | Number of KA Injured Persons |             |            |
|   |     |      | Occupants                    | Pedestrians | Bicyclists |
| 21-34 yr  | F   | 94   | 2298                         | 68          | 15         |
|   |     | 95   | 2346                         | 82          | 9          |
|   |     | 96   | 2095                         | 58          | 15         |
|   |     | 97   | 1809                         | 60          | 11         |
|   |     | 98   | 1659                         | 56          | 15         |
|   | M   | 94   | 3131                         | 149         | 53         |
|   |     | 95   | 3061                         | 170         | 46         |
|   |     | 96   | 2776                         | 137         | 41         |
|   |     | 97   | 2426                         | 132         | 35         |
|   |     | 98   | 2270                         | 114         | 32         |
| 35-54 yr  | F   | 94   | 1995                         | 91          | 6          |
|   |     | 95   | 2132                         | 89          | 6          |
|   |     | 96   | 2016                         | 81          | 11         |
|   |     | 97   | 1807                         | 72          | 14         |
|   |     | 98   | 1740                         | 80          | 13         |
|   | M   | 94   | 2163                         | 167         | 55         |
|   |     | 95   | 2236                         | 198         | 51         |
|   |     | 96   | 2172                         | 196         | 43         |
|   |     | 97   | 2004                         | 162         | 54         |
|   |     | 98   | 2005                         | 192         | 65         |
| 55-64 yr  | F   | 94   | 463                          | 18          | 2          |
|   |     | 95   | 492                          | 22          | 0          |
|   |     | 96   | 423                          | 16          | 1          |
|   |     | 97   | 383                          | 11          | 2          |
|   |     | 98   | 406                          | 12          | 3          |
|   | M   | 94   | 411                          | 29          | 10         |
|   |     | 95   | 414                          | 28          | 9          |
|   |     | 96   | 411                          | 44          | 7          |
|   |     | 97   | 409                          | 33          | 7          |
|   |     | 98   | 412                          | 39          | 5          |
| 65-69 yr  | F   | 94   | 212                          | 14          | 2          |
|   |     | 95   | 225                          | 8           | 1          |
|   |     | 96   | 205                          | 7           | 0          |
|   |     | 97   | 160                          | 9           | 1          |
|   |     | 98   | 158                          | 14          | 0          |
|   | M   | 94   | 168                          | 15          | 4          |
|   |     | 95   | 189                          | 17          | 1          |
|   |     | 96   | 153                          | 19          | 5          |
|   |     | 97   | 150                          | 14          | 4          |
|   |     | 98   | 155                          | 3           | 2          |

Table 22 - Number by Age, Sex, and Occupant Type (continued)

| Number of Occupants with Fatal or Serious Injuries<br>by Age, Gender, and Occupant Type |     |      |                              |             |            |
|---|-----|------|------------------------------|-------------|------------|
| Occupant<br>Age   | Sex | Year | Number of KA Injured Persons |             |            |
|   |     |      | Occupants                    | Pedestrians | Bicyclists |
| 70-74 yr  | F   | 94   | 221                          | 12          | 0          |
|   |     | 95   | 218                          | 9           | 0          |
|   |     | 96   | 170                          | 11          | 0          |
|   |     | 97   | 163                          | 10          | 1          |
|   |     | 98   | 196                          | 8           | 0          |
|   | M   | 94   | 147                          | 8           | 1          |
|   |     | 95   | 160                          | 17          | 1          |
|   |     | 96   | 163                          | 12          | 3          |
|   |     | 97   | 140                          | 18          | 1          |
|   |     | 98   | 125                          | 5           | 4          |
| 75-79 yr  | F   | 94   | 198                          | 11          | 0          |
|   |     | 95   | 201                          | 7           | 1          |
|   |     | 96   | 193                          | 7           | 0          |
|   |     | 97   | 177                          | 6           | 1          |
|   |     | 98   | 176                          | 13          | 0          |
|   | M   | 94   | 122                          | 15          | 2          |
|   |     | 95   | 163                          | 11          | 2          |
|   |     | 96   | 119                          | 8           | 1          |
|   |     | 97   | 121                          | 10          | 3          |
|   |     | 98   | 116                          | 20          | 3          |
| 80-84 yr  | F   | 94   | 112                          | 12          | 0          |
|   |     | 95   | 130                          | 9           | 0          |
|   |     | 96   | 135                          | 4           | 0          |
|   |     | 97   | 113                          | 5           | 0          |
|   |     | 98   | 128                          | 11          | 0          |
|   | M   | 94   | 93                           | 4           | 1          |
|   |     | 95   | 85                           | 7           | 2          |
|   |     | 96   | 114                          | 12          | 2          |
|   |     | 97   | 93                           | 10          | 3          |
|   |     | 98   | 78                           | 11          | 2          |

Table 23 - Number by Age, Sex, and Occupant Type (continued)

| <b>Number of Occupants with Fatal or Serious Injuries by Age, Gender, and Occupant Type</b> |            |             |                                     |                    |                   |
|---|------------|-------------|-------------------------------------|--------------------|-------------------|
| <i>Occupant Age</i>   | <i>Sex</i> | <i>Year</i> | <i>Number of KA Injured Persons</i> |                    |                   |
|   |            |             | <i>Occupants</i>                    | <i>Pedestrians</i> | <i>Bicyclists</i> |
| 85-89 yr  | F          | 94          | 54                                  | 4                  | 0                 |
|   |            | 95          | 53                                  | 3                  | 0                 |
|   |            | 96          | 49                                  | 3                  | 0                 |
|   |            | 97          | 63                                  | 5                  | 0                 |
|   |            | 98          | 49                                  | 8                  | 0                 |
|   | M          | 94          | 45                                  | 6                  | 2                 |
|   |            | 95          | 46                                  | 3                  | 0                 |
|   |            | 96          | 40                                  | 5                  | 0                 |
|   |            | 97          | 53                                  | 4                  | 2                 |
|   |            | 98          | 53                                  | 3                  | 0                 |
| 90 + yr   | F          | 94          | 14                                  | 0                  | 0                 |
|   |            | 95          | 17                                  | 0                  | 0                 |
|   |            | 96          | 20                                  | 0                  | 0                 |
|   |            | 97          | 22                                  | 5                  | 0                 |
|   |            | 98          | 20                                  | 0                  | 0                 |
|   | M          | 94          | 14                                  | 1                  | 0                 |
|   |            | 95          | 12                                  | 3                  | 0                 |
|   |            | 96          | 16                                  | 3                  | 1                 |
|   |            | 97          | 9                                   | 0                  | 1                 |
|   |            | 98          | 16                                  | 1                  | 0                 |

## Drivers Age 14-18

Table 24 - Number by Seat Position and Year

| Number and Rate of Fatal or Serious Injuries by<br>Seat Position and Year<br>Drivers Age 14-18 |             |                                  |   |
|--|-------------|----------------------------------|---|
| <i>Seat Position</i>   | <i>Year</i> | <i>Number of<br/>KA Injuries</i> | <i>Rate per 1000<br/>Licensed Drivers</i> |
| <i>Driver</i>  | 94          | 1343                             | 4.560                                     |
|  | 95          | 1329                             | 4.374                                     |
|  | 96          | 1242                             | 4.088                                     |
|  | 97          | 1114                             | 3.166                                     |
|  | 98          | 1043                             | 2.880                                     |
| <i>Front Center</i>  | 94          | 45                               | 0.153                                     |
|  | 95          | 28                               | 0.092                                     |
|  | 96          | 41                               | 0.135                                     |
|  | 97          | 27                               | 0.077                                     |
|  | 98          | 30                               | 0.083                                     |
| <i>Front Right</i>   | 94          | 610                              | 2.071                                     |
|  | 95          | 543                              | 1.787                                     |
|  | 96          | 553                              | 1.820                                     |
|  | 97          | 506                              | 1.438                                     |
|  | 98          | 449                              | 1.240                                     |
| <i>Rear Center</i>   | 94          | 54                               | 0.183                                     |
|  | 95          | 32                               | 0.105                                     |
|  | 96          | 30                               | 0.099                                     |
|  | 97          | 37                               | 0.105                                     |
|  | 98          | 34                               | 0.094                                     |
| <i>Rear Left</i>   | 94          | 111                              | 0.377                                     |
|  | 95          | 85                               | 0.280                                     |
|  | 96          | 92                               | 0.303                                     |
|  | 97          | 68                               | 0.193                                     |
|  | 98          | 93                               | 0.257                                     |
| <i>Rear Right</i>  | 94          | 151                              | 0.513                                     |
|  | 95          | 101                              | 0.332                                     |
|  | 96          | 102                              | 0.336                                     |
|  | 97          | 85                               | 0.242                                     |
|  | 98          | 89                               | 0.246                                     |

These patterns are the same as were seen for all drivers. This is a driver group that should show significant impact (i.e., reductions in injury counts and rates) if the graduated license programs are effective.



Table 25 - Number by Age, Sex, and Occupant Type

| Number of Occupants with Fatal or Serious Injuries by<br>Age, Gender, and Occupant Type<br>Drivers age 14-18 |     |      |                              |             |            |
|--|-----|------|------------------------------|-------------|------------|
| Occupant<br>Age  | Sex | Year | Number of KA Injured Persons |             |            |
|  |     |      | Occupants                    | Pedestrians | Bicyclists |
| 0 yr   | F   | 96   | 1                            | 0           | 0          |
|  |     | 97   | 2                            | 0           | 0          |
|  |     | 98   | 0                            | 0           | 0          |
|  | M   | 96   | 2                            | 0           | 0          |
|  |     | 98   | 1                            | 0           | 0          |
| 1 yr   | F   | 94   | 1                            | 0           | 0          |
|  |     | 95   | 3                            | 0           | 0          |
|  |     | 98   | 2                            | 0           | 0          |
|  | M   | 94   | 2                            | 0           | 0          |
|  |     | 95   | 1                            | 0           | 0          |
|  |     | 96   | 2                            | 0           | 0          |
|  |     | 97   | 1                            | 0           | 0          |
| 2 yr   | F   | 98   | 2                            | 0           | 0          |
|  |     | 94   | 1                            | 0           | 0          |
|  |     | 95   | 2                            | 0           | 0          |
|  |     | 97   | 2                            | 0           | 0          |
|  | M   | 94   | 3                            | 0           | 0          |
|  |     | 95   | 1                            | 0           | 0          |
|  |     | 98   | 1                            | 0           | 0          |
| 3 yr   | F   | 94   | 2                            | 0           | 0          |
|  |     | 96   | 1                            | 0           | 0          |
|  |     | 97   | 1                            | 0           | 0          |
|  |     | 98   | 0                            | 0           | 0          |
|  | M   | 94   | 1                            | 0           | 0          |
|  |     | 95   | 4                            | 0           | 0          |
|  |     | 96   | 1                            | 0           | 0          |
|  |     | 97   | 2                            | 0           | 0          |
| 4 yr   | F   | 98   | 2                            | 0           | 0          |
|  |     | 94   | 1                            | 0           | 0          |
|  |     | 95   | 2                            | 0           | 0          |
|  |     | 96   | 1                            | 0           | 0          |
|  |     | 97   | 2                            | 0           | 0          |
|  | M   | 98   | 1                            | 0           | 0          |
|  |     | 94   | 1                            | 0           | 0          |
|  |     | 97   | 2                            | 0           | 0          |
|  |     | 98   | 0                            | 0           | 0          |

These data show that drivers age 14-18 tend to have KA crashes with passengers near to their age (16-20 yr) and slightly younger (10-15 yr). This would suggest that peer approaches could help reach multiple segments of the adolescent traffic-safety problem.

Table 26 - Number by Age, Sex, and Occupant Type (continued)

| Number of Occupants with Fatal or Serious Injuries by<br>Age, Gender, and Occupant Type<br>Drivers age 14-18 |     |      |                              |             |            |
|--|-----|------|------------------------------|-------------|------------|
| Occupant<br>Age  | Sex | Year | Number of KA Injured Persons |             |            |
|  |     |      | Occupants                    | Pedestrians | Bicyclists |
| 5-9 yr   | F   | 94   | 6                            | 0           | 0          |
|  |     | 95   | 4                            | 0           | 0          |
|  |     | 96   | 9                            | 0           | 0          |
|  |     | 97   | 3                            | 0           | 0          |
|  |     | 98   | 3                            | 0           | 0          |
|  | M   | 94   | 8                            | 0           | 0          |
|  |     | 95   | 2                            | 0           | 0          |
|  |     | 96   | 4                            | 0           | 0          |
|  |     | 97   | 8                            | 0           | 0          |
|  |     | 98   | 11                           | 0           | 0          |
| 10-15 yr   | F   | 94   | 207                          | 35          | 8          |
|  |     | 95   | 192                          | 28          | 9          |
|  |     | 96   | 152                          | 24          | 12         |
|  |     | 97   | 145                          | 29          | 4          |
|  |     | 98   | 123                          | 19          | 5          |
|  | M   | 94   | 206                          | 36          | 38         |
|  |     | 95   | 176                          | 42          | 39         |
|  |     | 96   | 158                          | 35          | 28         |
|  |     | 97   | 122                          | 29          | 34         |
|  |     | 98   | 124                          | 27          | 28         |
| 16-20 yr   | F   | 94   | 825                          | 23          | 2          |
|  |     | 95   | 779                          | 22          | 9          |
|  |     | 96   | 773                          | 29          | 3          |
|  |     | 97   | 674                          | 27          | 4          |
|  |     | 98   | 638                          | 30          | 6          |
|  | M   | 94   | 1004                         | 44          | 21         |
|  |     | 95   | 911                          | 36          | 21         |
|  |     | 96   | 903                          | 35          | 18         |
|  |     | 97   | 734                          | 44          | 29         |
|  |     | 98   | 728                          | 37          | 19         |
| 21-34 yr   | F   | 94   | 19                           | 0           | 0          |
|  |     | 95   | 18                           | 0           | 0          |
|  |     | 96   | 17                           | 0           | 0          |
|  |     | 97   | 9                            | 0           | 0          |
|  |     | 98   | 15                           | 0           | 0          |
|  | M   | 94   | 52                           | 0           | 0          |
|  |     | 95   | 32                           | 0           | 0          |
|  |     | 96   | 28                           | 0           | 0          |
|  |     | 97   | 20                           | 0           | 0          |
|  |     | 98   | 26                           | 0           | 0          |

Table 27 - Number by Age, Sex, and Occupant Type (continued)

| Number of Occupants with Fatal or Serious Injuries by<br>Age, Gender, and Occupant Type<br>Drivers age 14-18 |     |      |                              |             |            |
|--|-----|------|------------------------------|-------------|------------|
| Occupant<br>Age  | Sex | Year | Number of KA Injured Persons |             |            |
|  |     |      | Occupants                    | Pedestrians | Bicyclists |
| 35-54 yr   | F   | 94   | 17                           | 0           | 0          |
|  |     | 95   | 22                           | 0           | 0          |
|  |     | 96   | 29                           | 0           | 0          |
|  |     | 97   | 24                           | 0           | 0          |
|  |     | 98   | 25                           | 0           | 0          |
|  | M   | 94   | 8                            | 0           | 0          |
|  |     | 95   | 9                            | 0           | 0          |
|  |     | 96   | 6                            | 0           | 0          |
|  |     | 97   | 10                           | 0           | 0          |
|  |     | 98   | 10                           | 0           | 0          |
| 55-64 yr   | F   | 94   | 1                            | 0           | 0          |
|  |     | 95   | 1                            | 0           | 0          |
|  |     | 96   | 4                            | 0           | 0          |
|  |     | 97   | 1                            | 0           | 0          |
|  |     | 98   | 2                            | 0           | 0          |
|  | M   | 94   | 1                            | 0           | 0          |
|  |     | 95   | 1                            | 0           | 0          |
|  |     | 96   | 4                            | 0           | 0          |
|  |     | 97   | 2                            | 0           | 0          |
|  |     | 98   | 2                            | 0           | 0          |
| 65-69 yr   | F   | 94   | 2                            | 0           | 0          |
|  |     | 95   | 2                            | 0           | 0          |
|  |     | 96   | 1                            | 0           | 0          |
|  |     | 97   | 1                            | 0           | 0          |
|  |     | 98   | 0                            | 0           | 0          |
|  | M   | 94   | 1                            | 0           | 0          |
|  |     | 95   | 2                            | 0           | 0          |
|  |     | 97   | 1                            | 0           | 0          |
|  |     | 98   | 0                            | 0           | 0          |

Table 28 - Number by Age, Sex, and Occupant Type (continued)

| Number of Occupants with Fatal or Serious Injuries by<br>Age, Gender, and Occupant Type<br>Drivers age 14-18 |     |      |                              |             |            |
|--|-----|------|------------------------------|-------------|------------|
| Occupant<br>Age  | Sex | Year | Number of KA Injured Persons |             |            |
|  |     |      | Occupants                    | Pedestrians | Bicyclists |
| 70-74 yr   | F   | 95   | 1                            | 0           | 0          |
|  |     | 98   | 1                            | 0           | 0          |
|  | M   | 96   | 1                            | 0           | 0          |
|  |     | 98   | 1                            | 0           | 0          |
| 75-79 yr   | F   | 96   | 1                            | 0           | 0          |
|  |     | 98   | 0                            | 0           | 0          |
|  | M   | 95   | 1                            | 0           | 0          |
|  |     | 97   | 1                            | 0           | 0          |
|  |     | 98   | 0                            | 0           | 0          |
| 80-84 yr   | F   | 96   | 1                            | 0           | 0          |
|  |     | 98   | 1                            | 0           | 0          |
|  | M   | 93   | 1                            | 0           | 0          |
|  |     | 98   | 0                            | 0           | 0          |
| 85-89 yr   | F   | 97   | 3                            | 0           | 0          |
|  |     | 98   | 0                            | 0           | 0          |
|  | M   | 98   | 0                            | 0           | 0          |
| 90 + yr  | F   | 98   | 0                            | 0           | 0          |
|  | M   | 94   | 1                            | 0           | 0          |
|  |     | 95   | 1                            | 0           | 0          |
|  |     | 98   | 0                            | 0           | 0          |

## Drivers Age 70+

Table 29 - Number and Rate by Seat Position and Year

| Number and Rate of Fatal or Serious Injuries by<br>Seat Position and Year<br>Drivers Age 70+ |             |                                  |   |
|--|-------------|----------------------------------|---|
| <i>Seat Position</i>   | <i>Year</i> | <i>Number of KA<br/>Injuries</i> | <i>Rate per 1000 Licensed<br/>Drivers</i> |
| <i>Driver</i>  | 94          | 728                              | 1.201                                     |
|  | 95          | 772                              | 1.225                                     |
|  | 96          | 750                              | 1.190                                     |
|  | 97          | 720                              | 1.102                                     |
|  | 98          | 703                              | 1.044                                     |
| <i>Front Center</i>  | 94          | 6                                | 0.010                                     |
|  | 95          | 4                                | 0.006                                     |
|  | 96          | 5                                | 0.008                                     |
|  | 97          | 4                                | 0.006                                     |
|  | 98          | 6                                | 0.009                                     |
| <i>Front Right</i>   | 94          | 208                              | 0.343                                     |
|  | 95          | 219                              | 0.347                                     |
|  | 96          | 205                              | 0.325                                     |
|  | 97          | 192                              | 0.294                                     |
|  | 98          | 187                              | 0.277                                     |
| <i>Rear Center</i>   | 94          | 3                                | 0.005                                     |
|  | 95          | 5                                | 0.008                                     |
|  | 96          | 3                                | 0.005                                     |
|  | 97          | 3                                | 0.005                                     |
|  | 98          | 6                                | 0.009                                     |
| <i>Rear Left</i>   | 94          | 14                               | 0.023                                     |
|  | 95          | 13                               | 0.021                                     |
|  | 96          | 10                               | 0.016                                     |
|  | 97          | 9                                | 0.014                                     |
|  | 98          | 7                                | 0.010                                     |
| <i>Rear Right</i>  | 94          | 12                               | 0.020                                     |
|  | 95          | 14                               | 0.022                                     |
|  | 96          | 12                               | 0.019                                     |
|  | 97          | 11                               | 0.017                                     |
|  | 98          | 11                               | 0.016                                     |

These data also follow the patterns seen for young drivers and all drivers.

Table 30 - Number by Age and Gender

| Number of Occupants with Fatal or Serious Injuries by Age and Gender<br>Drivers Age 70+ |     |      |                                |
|---|-----|------|--------------------------------|
| Age   | Sex | Year | Number of KA Injured Occupants |
| 0 yr  | F   | 94   | 1                              |
| 2 yr  | F   | 95   | 1                              |
|   |     | 97   | 2                              |
| 3 yr  | M   | 95   | 1                              |
| 5-9 yr  | F   | 94   | 1                              |
|   |     | 95   | 4                              |
|   |     | 98   | 1                              |
|   | M   | 94   | 2                              |
|   |     | 95   | 3                              |
|   |     | 96   | 1                              |
| 10-15 yr  | F   | 98   | 3                              |
|   |     | 94   | 1                              |
|   |     | 95   | 4                              |
|   |     | 96   | 3                              |
|   |     | 97   | 3                              |
|   | M   | 98   | 0                              |
|   |     | 95   | 1                              |
|   |     | 96   | 3                              |
| 16-20 yr  | F   | 97   | 1                              |
|   |     | 94   | 2                              |
|   |     | 96   | 1                              |
|   | M   | 97   | 1                              |
|   |     | 98   | 1                              |
|   |     | 94   | 2                              |
| 21-34 yr  | F   | 95   | 5                              |
|   |     | 96   | 4                              |
|   |     | 97   | 1                              |
|   |     | 98   | 1                              |
|   |     | 94   | 1                              |
|   | M   | 95   | 1                              |
|   |     | 96   | 1                              |
|   |     | 97   | 1                              |
|   |     | 98   | 1                              |

As was the case for drivers age 14-18, drivers age 70+ tend to have KA crashes with passengers in their cars that are close to their own age.

Table 31 - Number by Age and Gender (continued)

| <b>Number of Occupants with Fatal or Serious Injuries by Age and Gender Drivers Age 70+</b> |            |             |                                       |
|---|------------|-------------|---------------------------------------|
| <i>Age</i>  | <i>Sex</i> | <i>Year</i> | <i>Number of KA Injured Occupants</i> |
| 35-54 yr  | F          | 94          | 7                                     |
|   |            | 95          | 13                                    |
|   |            | 96          | 16                                    |
|   |            | 97          | 10                                    |
|   |            | 98          | 8                                     |
|   | M          | 94          | 4                                     |
|   |            | 95          | 4                                     |
|   |            | 96          | 3                                     |
|   |            | 97          | 8                                     |
|   |            | 98          | 4                                     |
| 55-64 yr  | F          | 94          | 12                                    |
|   |            | 95          | 12                                    |
|   |            | 96          | 10                                    |
|   |            | 97          | 5                                     |
|   |            | 98          | 9                                     |
|   | M          | 94          | 2                                     |
|   |            | 95          | 4                                     |
|   |            | 96          | 1                                     |
|   |            | 97          | 1                                     |
|   |            | 98          | 1                                     |
| 65-69 yr  | F          | 94          | 26                                    |
|   |            | 95          | 24                                    |
|   |            | 96          | 30                                    |
|   |            | 97          | 11                                    |
|   |            | 98          | 20                                    |
|   | M          | 94          | 2                                     |
|   |            | 95          | 2                                     |
|   |            | 96          | 1                                     |
|   |            | 97          | 3                                     |
|   |            | 98          | 0                                     |
| 70-74 yr  | F          | 94          | 183                                   |
|   |            | 95          | 188                                   |
|   |            | 96          | 133                                   |
|   |            | 97          | 136                                   |
|   |            | 98          | 160                                   |
|   | M          | 94          | 134                                   |
|   |            | 95          | 140                                   |
|   |            | 96          | 145                                   |
|   |            | 97          | 134                                   |
|   |            | 98          | 116                                   |

Table 32 - Number by Age and Gender (continued)

| Number of Occupants with Fatal or Serious Injuries by Age and Gender Drivers Age 70+ |     |      |                                |
|--|-----|------|--------------------------------|
| Age  | Sex | Year | Number of KA Injured Occupants |
| 75-79 yr   | F   | 94   | 169                            |
|  |     | 95   | 167                            |
|  |     | 96   | 169                            |
|  |     | 97   | 148                            |
|  |     | 98   | 145                            |
|  | M   | 94   | 114                            |
|  |     | 95   | 153                            |
|  |     | 96   | 111                            |
|  |     | 97   | 110                            |
|  |     | 98   | 112                            |
| 80-84 yr   | F   | 94   | 98                             |
|  |     | 95   | 96                             |
|  |     | 96   | 114                            |
|  |     | 97   | 97                             |
|  |     | 98   | 117                            |
|  | M   | 94   | 86                             |
|  |     | 95   | 81                             |
|  |     | 96   | 106                            |
|  |     | 97   | 89                             |
|  |     | 98   | 74                             |
| 85-89 yr   | F   | 94   | 44                             |
|  |     | 95   | 39                             |
|  |     | 96   | 37                             |
|  |     | 97   | 46                             |
|  |     | 98   | 38                             |
|  | M   | 94   | 44                             |
|  |     | 95   | 43                             |
|  |     | 96   | 37                             |
|  |     | 97   | 46                             |
|  |     | 98   | 48                             |
| 90 + yr  | F   | 94   | 7                              |
|  |     | 95   | 7                              |
|  |     | 96   | 14                             |
|  |     | 97   | 14                             |
|  |     | 98   | 16                             |
|  | M   | 94   | 7                              |
|  |     | 95   | 8                              |
|  |     | 96   | 14                             |
|  |     | 97   | 6                              |
|  |     | 98   | 16                             |



# **'HAD-BEEN DRINKING' KA CRASHES**

## **All Drivers**

Table 33 - Number and Rate by Year

| Number and Rate of Fatal or Serious Injury<br>'Had-Been-Drinking' Crashes |                      |                             |                                      |                             |                                   |
|---|----------------------|-----------------------------|--------------------------------------|-----------------------------|-----------------------------------|
| Year  | Number of<br>Crashes | Rate per 100<br>Million VMT | Rate per 1000<br>Registered Vehicles | Rate per 1000<br>Population | Rate per 1000<br>Licensed Drivers |
| 94  | 3,294                | 3.866                       | 0.417                                | 0.347                       | 0.499                             |
| 95  | 3,198                | 3.731                       | 0.397                                | 0.335                       | 0.479                             |
| 96  | 2,781                | 3.172                       | 0.337                                | 0.291                       | 0.417                             |
| 97  | 2,635                | 2.953                       | 0.315                                | 0.275                       | 0.386                             |
| 98  | 2,518                | 2.748                       | 0.293                                | 0.257                       | 0.364                             |
| Change<br>94 to 98  | -23.56%              | -28.92%                     | -29.74%                              | -25.21%                     | -27.05%                           |
| Change<br>97 to 98  | -4.44%               | -6.94%                      | -6.98%                               | -6.54%                      | -5.70%                            |

This table shows that significant declines in had-been-drinking (HBD) crashes resulting in death or serious injury have been experienced since 1994. It is likely that the new set of laws designed to impact the repeat alcohol offender that went into effect October 1999 will have a noticeable impact on these figures in years to come.

Table 34 - Number and Rate by Age, Sex, and Year

| Fatal or Serious Injury Crash Frequency and Rates<br>'Had-Been-Drinking' Crashes<br>by Year, Age Group, and Sex |     |                    |                      |                             |                                   |
|---|-----|--------------------|----------------------|-----------------------------|-----------------------------------|
| Age   | Sex | Year               | Number of<br>Crashes | Rate per 1000<br>Population | Rate per 1000<br>Licensed Drivers |
| 16-20 yr  | F   | 94                 | 59                   | 0.181                       | 0.232                             |
|   |     | 95                 | 56                   | 0.17                        | 0.215                             |
|   |     | 96                 | 64                   | 0.19                        | 0.246                             |
|   |     | 97                 | 37                   | 0.095                       | 0.138                             |
|   |     | 98                 | 62                   | 0.175                       | 0.227                             |
|   |     | Change<br>94 to 98 | 5.08%                | -3.31%                      | -2.16%                            |
|   |     | Change<br>97 to 98 | 67.57%               | 84.21%                      | 64.49%                            |
|   | M   | 94                 | 291                  | 0.871                       | 1.075                             |
|   |     | 95                 | 296                  | 0.873                       | 1.08                              |
|   |     | 96                 | 250                  | 0.713                       | 0.912                             |
|   |     | 97                 | 221                  | 0.616                       | 0.779                             |
|   |     | 98                 | 232                  | 0.632                       | 0.807                             |
|   |     | Change<br>94 to 98 | -20.27%              | -27.44%                     | -24.93%                           |
|   |     | Change<br>97 to 98 | 4.98%                | 2.60%                       | 3.59%                             |
| 21-34 yr  | F   | 94                 | 306                  | 0.301                       | 0.324                             |
|   |     | 95                 | 271                  | 0.271                       | 0.292                             |
|   |     | 96                 | 261                  | 0.268                       | 0.281                             |
|   |     | 97                 | 225                  | 0.244                       | 0.251                             |
|   |     | 98                 | 208                  | 0.217                       | 0.235                             |
|   |     | Change<br>94 to 98 | -32.03%              | -27.91%                     | -27.47%                           |
|   |     | Change<br>97 to 98 | -7.56%               | -11.07%                     | -6.37%                            |
|   | M   | 94                 | 1280                 | 1.295                       | 1.359                             |
|   |     | 95                 | 1247                 | 1.284                       | 1.342                             |
|   |     | 96                 | 1007                 | 1.057                       | 1.084                             |
|   |     | 97                 | 1035                 | 1.067                       | 1.14                              |
|   |     | 98                 | 911                  | 0.983                       | 1.011                             |
|   |     | Change<br>94 to 98 | -28.83%              | -24.09%                     | -25.61%                           |
|   |     | Change<br>97 to 98 | -11.98%              | -7.87%                      | -11.32%                           |

The largest number of HBD crashes occur among male drivers age 21-54, but it is male drivers age 21-34 that represent Michigan's largest drunk driving crash group. Males age 21-34 consistently have both the most HBD crashes resulting in death and serious injury and the highest rates of these crashes.

The good news is that it is just this problem group (males age 21-34) that has experienced the largest reductions in HBD crashes. The bad news is that in order to continue to achieve this decline, we must not only continue what is being done, but increase our efforts to reach new subgroups of this population.

Table 35 - Number and Rate by Age, Sex, and Year (continued)

| <b>Fatal or Serious Injury Crash Frequency and Rates<br/> 'Had-Been-Drinking' Crashes<br/> by Year, Age Group, and Sex</b> |     |                    |                      |                             |                                   |
|--|-----|--------------------|----------------------|-----------------------------|-----------------------------------|
| Age  | Sex | Year               | Number of<br>Crashes | Rate per 1000<br>Population | Rate per 1000<br>Licensed Drivers |
| 35-54 yr   | F   | 94                 | 179                  | 0.133                       | 0.139                             |
|  |     | 95                 | 215                  | 0.156                       | 0.163                             |
|  |     | 96                 | 206                  | 0.15                        | 0.156                             |
|  |     | 97                 | 176                  | 0.123                       | 0.129                             |
|  |     | 98                 | 196                  | 0.133                       | 0.141                             |
|  |     | Change<br>94 to 98 | 9.50%                | 0.00%                       | 1.44%                             |
|  |     | Change<br>97 to 98 | 11.36%               | 8.13%                       | 9.30%                             |
|  | M   | 94                 | 822                  | 0.632                       | 0.652                             |
|  |     | 95                 | 849                  | 0.635                       | 0.658                             |
|  |     | 96                 | 763                  | 0.558                       | 0.591                             |
|  |     | 97                 | 744                  | 0.563                       | 0.555                             |
|  |     | 98                 | 744                  | 0.52                        | 0.546                             |
|  |     | Change<br>94 to 98 | -9.49%               | -17.72%                     | -16.26%                           |
|  |     | Change<br>97 to 98 | 0.00%                | -7.64%                      | -1.62%                            |
| 55-69 yr   | F   | 94                 | 11                   | 0.019                       | 0.021                             |
|  |     | 95                 | 20                   | 0.034                       | 0.038                             |
|  |     | 96                 | 8                    | 0.014                       | 0.015                             |
|  |     | 97                 | 17                   | 0.03                        | 0.031                             |
|  |     | 98                 | 12                   | 0.02                        | 0.022                             |
|  |     | Change<br>94 to 98 | 9.09%                | 5.26%                       | 4.76%                             |
|  |     | Change<br>97 to 98 | -29.41%              | -33.33%                     | -29.03%                           |
|  | M   | 94                 | 100                  | 0.188                       | 0.195                             |
|  |     | 95                 | 142                  | 0.268                       | 0.276                             |
|  |     | 96                 | 112                  | 0.212                       | 0.218                             |
|  |     | 97                 | 117                  | 0.213                       | 0.222                             |
|  |     | 98                 | 102                  | 0.186                       | 0.189                             |
|  |     | Change<br>94 to 98 | 2.00%                | -1.06%                      | -3.08%                            |
|  |     | Change<br>97 to 98 | -12.82%              | -12.68%                     | -14.86%                           |

Table 36 - Number and Rate by Age, Sex, and Year (continued)

| <b>Fatal or Serious Injury Crash Frequency and Rates<br/> 'Had-Been-Drinking' Crashes<br/> by Year, Age Group, and Sex</b> |            |                    |                              |                                     |   |
|--|------------|--------------------|------------------------------|-------------------------------------|---|
| <i>Age</i>   | <i>Sex</i> | <i>Year</i>        | <i>Number of<br/>Crashes</i> | <i>Rate per 1000<br/>Population</i> | <i>Rate per 1000<br/>Licensed Drivers</i> |
| 70+ yr   | F          | 94                 | 2                            | 0.004                               | 0.006                                     |
|  |            | 95                 | 2                            | 0.004                               | 0.006                                     |
|  |            | 96                 | 1                            | 0.002                               | 0.003                                     |
|  |            | 97                 | 5                            | 0.011                               | 0.014                                     |
|  |            | 98                 | 8                            | 0.015                               | 0.022                                     |
|  |            | Change<br>94 to 98 | 300.00%                      | 275.00%                             | 266.67%                                   |
|  |            | Change<br>97 to 98 | 60.00%                       | 36.36%                              | 57.14%                                    |
|  | M          | 94                 | 30                           | 0.096                               | 0.105                                     |
|  |            | 95                 | 28                           | 0.088                               | 0.095                                     |
|  |            | 96                 | 37                           | 0.113                               | 0.125                                     |
|  |            | 97                 | 26                           | 0.097                               | 0.085                                     |
|  |            | 98                 | 28                           | 0.08                                | 0.089                                     |
|  |            | Change<br>94 to 98 | -6.67%                       | -16.67%                             | -15.24%                                   |
|  |            | Change<br>97 to 98 | 7.69%                        | -17.53%                             | 4.71%                                     |

Table 37 - Number of HBD Pedestrian and Bicyclist by Age, Sex, and Year

| Number of 'Had-Been-Drinking' Bicyclists and Pedestrians<br>with Fatal or Serious Crash Injuries<br>by Age Group, Gender, and Year |        |      |            |             |
|--|--------|------|------------|-------------|
| Age Group  | Gender | Year | Bicyclists | Pedestrians |
| 10-15 yr   | F      | 94   | 0          | 0           |
|  |        | 95   | 0          | 0           |
|  |        | 96   | 0          | 1           |
|  |        | 97   | 0          | 0           |
|  |        | 98   | 0          | 0           |
|  | M      | 94   | 0          | 0           |
|  |        | 95   | 0          | 1           |
|  |        | 96   | 0          | 0           |
|  |        | 97   | 0          | 0           |
|  |        | 98   | 0          | 1           |
| 16-20 yr   | F      | 94   | 0          | 1           |
|  |        | 95   | 0          | 2           |
|  |        | 96   | 0          | 2           |
|  |        | 97   | 0          | 1           |
|  |        | 98   | 1          | 6           |
|  | M      | 94   | 1          | 6           |
|  |        | 95   | 1          | 13          |
|  |        | 96   | 2          | 10          |
|  |        | 97   | 0          | 11          |
|  |        | 98   | 0          | 8           |
| 21-34 yr   | F      | 94   | 2          | 13          |
|  |        | 95   | 0          | 16          |
|  |        | 96   | 1          | 11          |
|  |        | 97   | 0          | 6           |
|  |        | 98   | 0          | 9           |
|  | M      | 94   | 9          | 41          |
|  |        | 95   | 10         | 57          |
|  |        | 96   | 10         | 35          |
|  |        | 97   | 4          | 36          |
|  |        | 98   | 8          | 28          |
| 35-54 yr   | F      | 94   | 0          | 11          |
|  |        | 95   | 1          | 12          |
|  |        | 96   | 1          | 15          |
|  |        | 97   | 1          | 12          |
|  |        | 98   | 1          | 15          |
|  | M      | 94   | 15         | 34          |
|  |        | 95   | 11         | 51          |
|  |        | 96   | 10         | 58          |
|  |        | 97   | 4          | 60          |
|  |        | 98   | 16         | 65          |

Table 38 - Number of HBD Pedestrian and Bicyclist by Age, Sex, and Year (continued)

| Number of 'Had-Been-Drinking' Bicyclists and Pedestrians with Fatal or Serious Crash Injuries<br>by Age Group, Gender, and Year |               |             |                   |                    |
|---|---------------|-------------|-------------------|--------------------|
| <i>Age Group</i>  | <i>Gender</i> | <i>Year</i> | <i>Bicyclists</i> | <i>Pedestrians</i> |
| 55-64 yr  | F             | 94          | 0                 | 0                  |
|   |               | 95          | 0                 | 1                  |
|   |               | 96          | 0                 | 0                  |
|   |               | 97          | 0                 | 1                  |
|   |               | 98          | 0                 | 0                  |
|   | M             | 94          | 0                 | 8                  |
|   |               | 95          | 0                 | 11                 |
|   |               | 96          | 3                 | 9                  |
|   |               | 97          | 20                | 7                  |
|   |               | 98          | 0                 | 7                  |
| 65-69 yr  | F             | 94          | 0                 | 1                  |
|   |               | 95          | 0                 | 0                  |
|   |               | 96          | 0                 | 0                  |
|   |               | 97          | 0                 | 0                  |
|   |               | 98          | 0                 | 0                  |
|   | M             | 94          | 0                 | 1                  |
|   |               | 95          | 0                 | 5                  |
|   |               | 96          | 0                 | 5                  |
|   |               | 97          | 0                 | 1                  |
|   |               | 98          | 0                 | 0                  |

## Fatal or Serious Injury 'Had-Been Drinking' Crashes by Month and Year

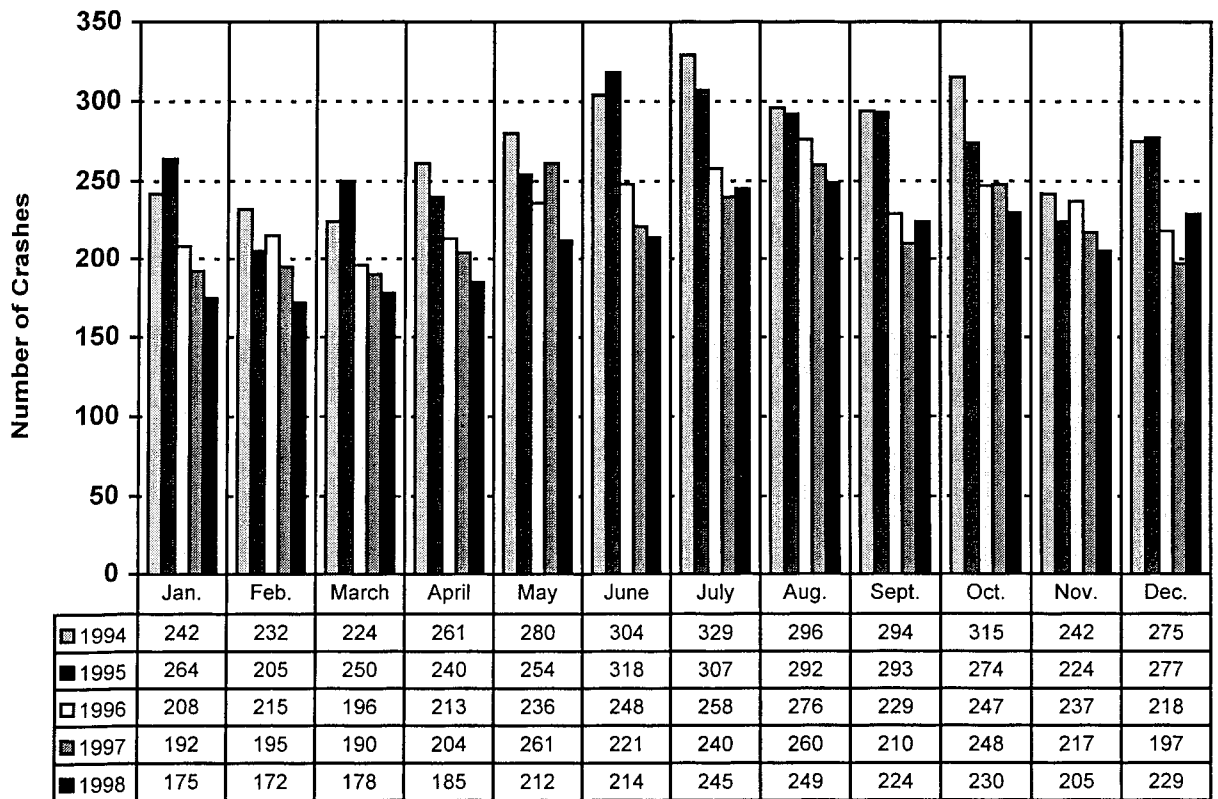


Chart 22 - Number by Month and Year

This chart appears to show a phenomenon first described in last year's trend report. That is, the declines that have been observed, particularly in summer and traditional holiday months have begun to taper off, and in some cases reverse themselves (e.g., July and December). This is probably a sign that we have reached those persons whose drinking and driving behavior is relatively easy to modify, and we are thus left with the more difficult cases. These persons should be affected by the new repeat-offender laws that went into effect October 1999.

## Fatal or Serious Injury 'Had-Been Drinking' Crashes by Day of Week and Year

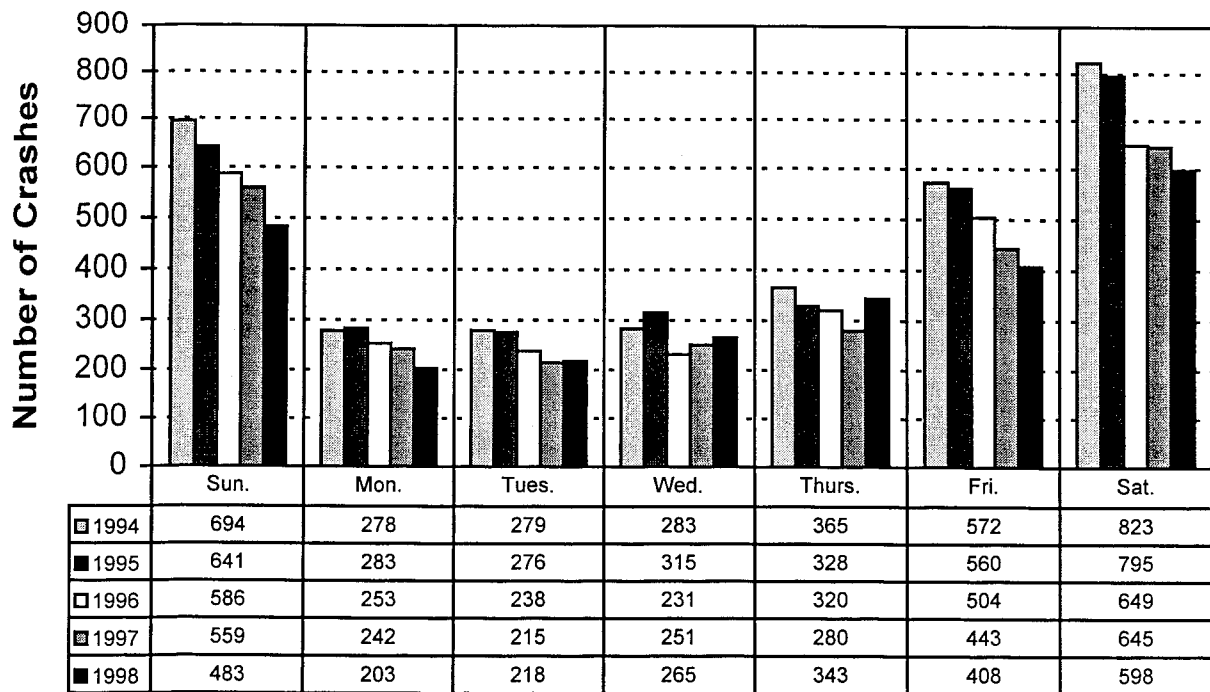


Chart 23 - Number by Day of Week

This chart more clearly shows the declining effect noted in the discussion of the previous chart. Note that while crash frequencies have been declining on the weekend days, that these declines have lessened in the last two years. Also note that the number of HBD crashes has remained relatively stable or even slightly increased on weekdays. This also supports the hypothesis that we have reached a point where new efforts will be required to achieve additional gains against alcohol-impaired driving.



## Fatal or Serious Injury 'Had-Been Drinking' Crashes by Highway Class and Year

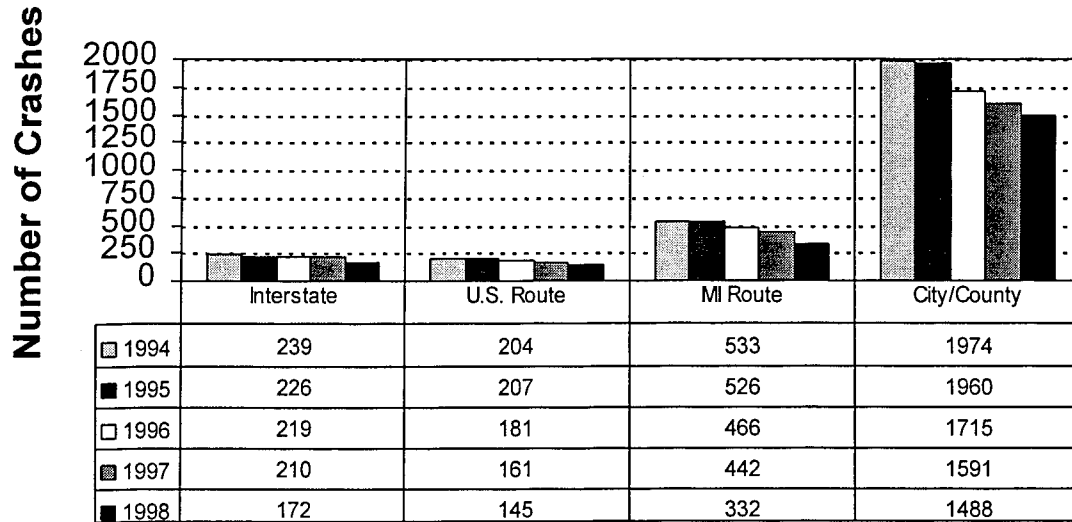


Chart 24 - Number by Highway Class and Year

Alcohol-impaired driving crashes are most common on city/county roads. Year-to-year declines have been steady for all road types.

## Drivers Age 14-18

Table 39 - Number and Rate by Year

| <b>Number and Rate of Fatal or Serious<br/>'Had-Been-Drinking' Crashes by Year<br/>Drivers Age 14-18</b> |             |                              |   |
|--|-------------|------------------------------|---|
| <i>Driver Age 14-18</i>  | <i>Year</i> | <i>Number of<br/>Crashes</i> | <i>Rate per 1000<br/>Licensed Drivers</i> |
|  | 94          | 167                          | 0.567                                     |
|  | 95          | 153                          | 0.504                                     |
|  | 96          | 147                          | 0.484                                     |
|  | 97          | 116                          | 0.330                                     |
|  | 98          | 130                          | 0.360                                     |

This is obviously a small problem in terms of achieving statewide traffic-safety goals.

Table 40 - Number and Rate by Age, Sex, and Year

| Number and Rate of Fatal or Serious Injury 'Had-Been-Drinking' Crashes<br>by Driver Age, Gender, and Year<br>Drivers Age 14-18 |     |      |                   |                                |
|--|-----|------|-------------------|--------------------------------|
| Age  | Sex | Year | Number of Crashes | Rate per 1000 Licensed Drivers |
| 14 yr  | F   | 94   | 2                 | 6.826                          |
|  |     | 95   | 1                 | 3.984                          |
|  |     | 96   | 2                 | 7.968                          |
|  |     | 97   | 1                 | 0.048                          |
|  |     | 98   | 1                 | 0.043                          |
|  | M   | 94   | 4                 | 2.278                          |
|  |     | 95   | 0                 | 0                              |
|  |     | 96   | 1                 | 0.653                          |
|  |     | 97   | 4                 | 0.189                          |
|  |     | 98   | 4                 | 0.172                          |
| 16 yr  | F   | 94   | 3                 | 0.075                          |
|  |     | 95   | 3                 | 0.072                          |
|  |     | 96   | 7                 | 0.168                          |
|  |     | 97   | 6                 | 0.142                          |
|  |     | 98   | 3                 | 0.064                          |
|  | M   | 94   | 20                | 0.486                          |
|  |     | 95   | 19                | 0.442                          |
|  |     | 96   | 13                | 0.302                          |
|  |     | 97   | 15                | 0.339                          |
|  |     | 98   | 8                 | 0.167                          |
| 17 yr  | F   | 94   | 16                | 0.319                          |
|  |     | 95   | 5                 | 0.098                          |
|  |     | 96   | 13                | 0.255                          |
|  |     | 97   | 5                 | 0.095                          |
|  |     | 98   | 13                | 0.251                          |
|  | M   | 94   | 46                | 0.869                          |
|  |     | 95   | 45                | 0.854                          |
|  |     | 96   | 35                | 0.664                          |
|  |     | 97   | 29                | 0.527                          |
|  |     | 98   | 33                | 0.610                          |
| 18 yr  | F   | 94   | 15                | 0.286                          |
|  |     | 95   | 16                | 0.291                          |
|  |     | 96   | 12                | 0.218                          |
|  |     | 97   | 12                | 0.213                          |
|  |     | 98   | 21                | 3.778                          |
|  | M   | 94   | 60                | 1.069                          |
|  |     | 95   | 63                | 1.076                          |
|  |     | 96   | 63                | 1.076                          |
|  |     | 97   | 41                | 0.694                          |
|  |     | 98   | 47                | 7.975                          |

## Fatal or Serious Injury 'Had-Been Drinking' Crashes by Month and Year - Drivers Age 14-18

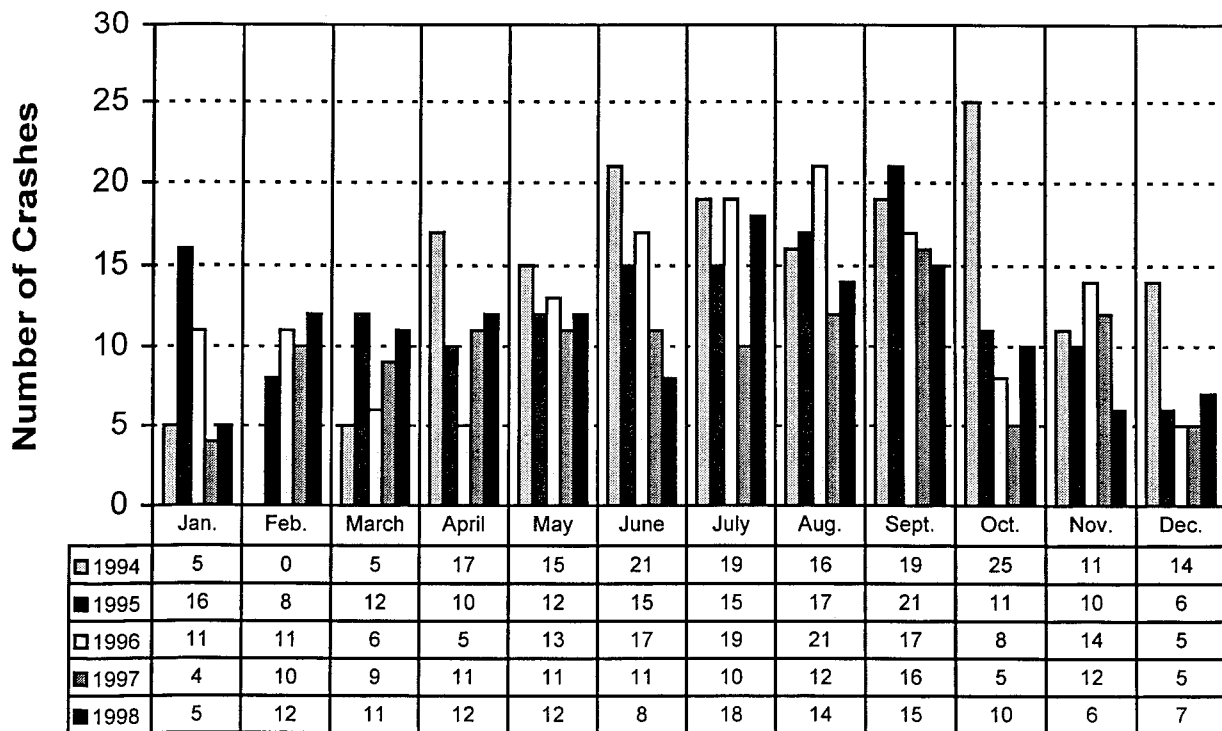


Chart 25 - Number by Month and Year

Small sample sizes make interpretation of this chart difficult. There are no apparent trends to speak of.

# Fatal or Serious Injury 'Had-Been Drinking' Crashes by Day of Week and Year - Drivers Age 14-18

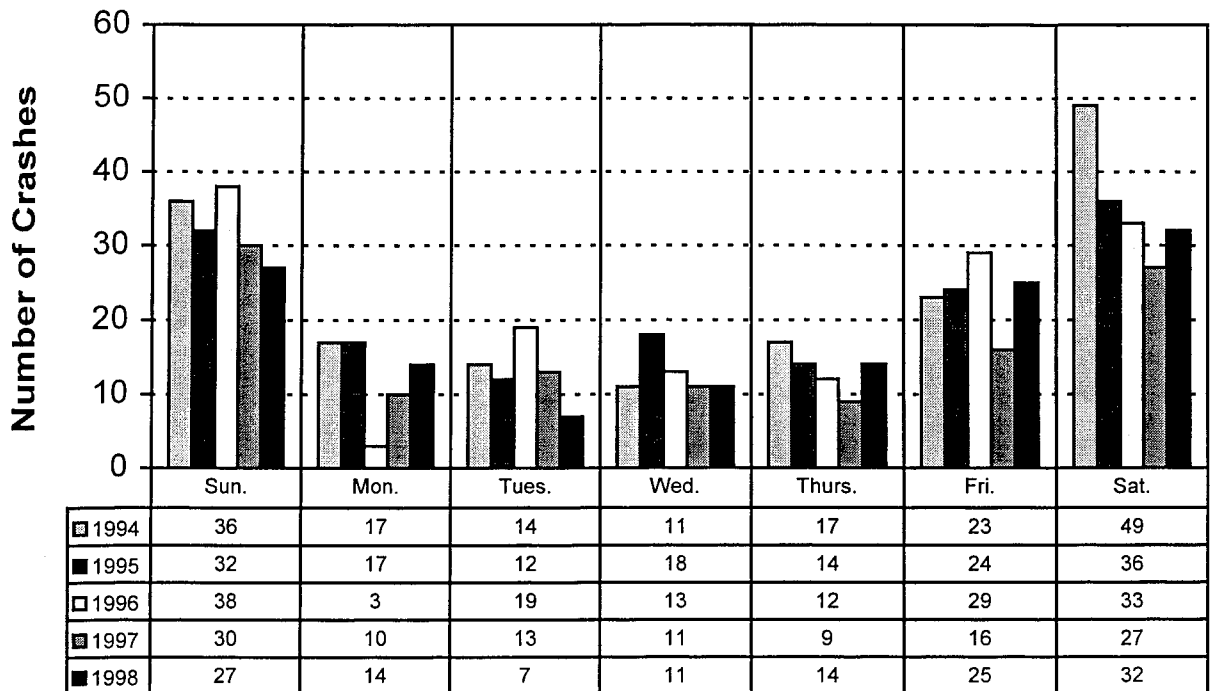


Chart 26 - Number by Day of Week

Although these data should be interpreted with extreme caution given the small sample sizes, it would appear that Friday, Saturday, and Sunday remain key times to focus on prevention among this age group.

# **Fatal or Serious Injury 'Had-Been Drinking'** **Crashes by Highway Class and** **Year - Drivers Age 14-18**

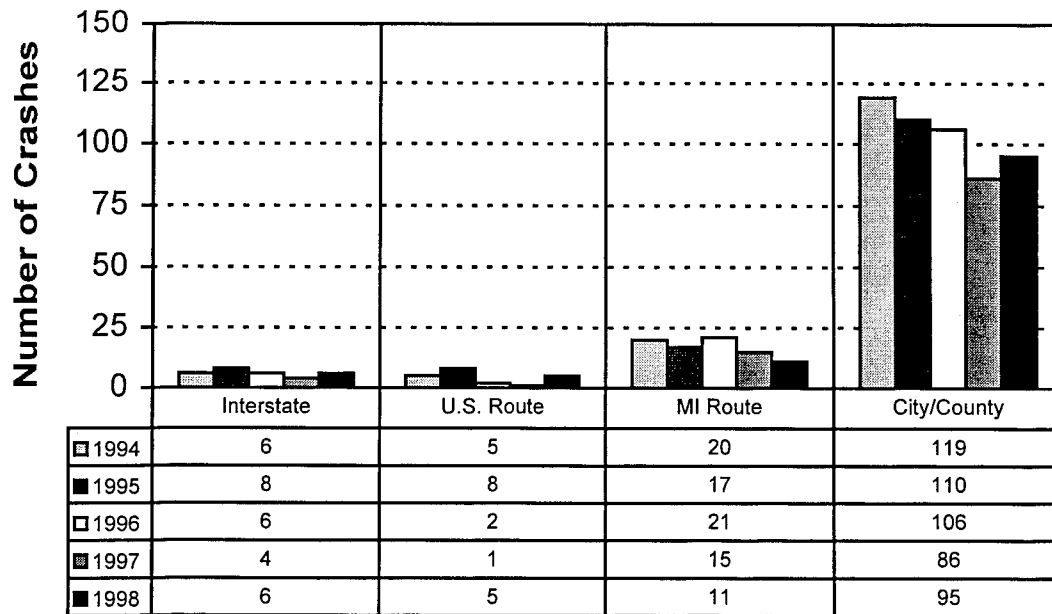


Chart 27 - Number by Highway Class and Year

Most crashes are on city/county roads. Note that the annual decline in crashes on these roads ended in 1998, making them a potential target for future program efforts.

## Drivers Age 70+

Table 41 - Number and Rate by Year

| Number and Rate of Fatal or Serious Injury<br>'Had-Been-Drinking' Crashes by Year<br>Drivers Age 70+ |      |                      |                                   |
|--|------|----------------------|-----------------------------------|
| Driver Age 70+   | Year | Number of<br>Crashes | Rate per 1000<br>Licensed Drivers |
|  | 94   | 33                   | 0.054                             |
|  | 95   | 30                   | 0.048                             |
|  | 96   | 40                   | 0.063                             |
|  | 97   | 31                   | 0.047                             |
|  | 98   | 37                   | 0.055                             |

This is too small a group to worry about at this point. This table is included for completeness, for future reference, and for persons interested in the traffic-safety issues involving older drivers.

Table 42 - Number and Rate by Age, Sex, and Year

| <b>Fatal or Serious Injury Crash Frequency and Rate -- 'Had-Been-Drinking' Crashes<br/>by Year, Age Group, and Sex<br/>Drivers Age 70+</b> |            |             |                              |   |
|--|------------|-------------|------------------------------|---|
| <i>Age</i>   | <i>Sex</i> | <i>Year</i> | <i>Number of<br/>Crashes</i> | <i>Rate per 1000<br/>Licensed Drivers</i> |
| 70-74 yr   | F          | 94          | 0                            | 0.000                                     |
|  |            | 95          | 1                            | 0.007                                     |
|  |            | 96          | 0                            | 0.000                                     |
|  |            | 97          | 4                            | 0.028                                     |
|  |            | 98          | 3                            | 0.021                                     |
|  | M          | 94          | 14                           | 0.108                                     |
|  |            | 95          | 10                           | 0.075                                     |
|  |            | 96          | 19                           | 0.143                                     |
|  |            | 97          | 17                           | 0.127                                     |
|  |            | 98          | 17                           | 0.126                                     |
| 75-79 yr   | F          | 94          | 1                            | 0.010                                     |
|  |            | 95          | 1                            | 0.010                                     |
|  |            | 96          | 1                            | 0.010                                     |
|  |            | 97          | 0                            | 0.000                                     |
|  |            | 98          | 4                            | 0.036                                     |
|  | M          | 94          | 9                            | 0.105                                     |
|  |            | 95          | 14                           | 0.157                                     |
|  |            | 96          | 6                            | 0.067                                     |
|  |            | 97          | 6                            | 0.064                                     |
|  |            | 98          | 6                            | 0.062                                     |
| 80-84 yr   | F          | 94          | 1                            | 0.018                                     |
|  |            | 95          | 0                            | 0.000                                     |
|  |            | 96          | 0                            | 0.000                                     |
|  |            | 97          | 1                            | 0.016                                     |
|  |            | 98          | 1                            | 0.015                                     |
|  | M          | 94          | 6                            | 0.128                                     |
|  |            | 95          | 3                            | 0.060                                     |
|  |            | 96          | 9                            | 0.181                                     |
|  |            | 97          | 2                            | 0.038                                     |
|  |            | 98          | 3                            | 0.054                                     |
| 85-89 yr   | F          | 94          | 0                            | 0.000                                     |
|  |            | 95          | 0                            | 0.000                                     |
|  |            | 96          | 0                            | 0.000                                     |
|  |            | 97          | 0                            | 0.000                                     |
|  |            | 98          | 0                            | 0   |
|  | M          | 94          | 0                            | 0.000                                     |
|  |            | 95          | 1                            | 0.052                                     |
|  |            | 96          | 2                            | 0.104                                     |
|  |            | 97          | 1                            | 0.049                                     |
|  |            | 98          | 1                            | 0.045                                     |



Table 43 - Number and Rate by Age, Sex, and Year (continued)

| <b>Fatal or Serious Injury Crash Frequency and Rate -- 'Had-Been-Drinking' Crashes</b><br><b>by Year, Age Group, and Sex</b><br><b>Drivers Age 70+</b> |            |             |                          |                                       |
|--|------------|-------------|--------------------------|---------------------------------------|
| <i>Age</i>   | <i>Sex</i> | <i>Year</i> | <i>Number of Crashes</i> | <i>Rate per 1000 Licensed Drivers</i> |
| 90-94 yr   | F          | 94          | 0                        | 0.000                                 |
|  |            | 95          | 0                        | 0.000                                 |
|  |            | 96          | 0                        | 0.000                                 |
|  |            | 97          | 0                        | 0.000                                 |
|  |            | 98          | 0                        | 0                                     |
|  | M          | 94          | 1                        | 0.236                                 |
|  |            | 95          | 0                        | 0.000                                 |
|  |            | 96          | 0                        | 0.000                                 |
|  |            | 97          | 0                        | 0.000                                 |
|  |            | 98          | 1                        | 0.185                                 |
| 95+ yr   | F          | 94          | 0                        | 0.000                                 |
|  |            | 95          | 0                        | 0.000                                 |
|  |            | 96          | 0                        | 0.000                                 |
|  |            | 97          | 0                        | 0.000                                 |
|  |            | 98          | 0                        | 0                                     |
|  | M          | 94          | 0                        | 0.000                                 |
|  |            | 95          | 0                        | 0.000                                 |
|  |            | 96          | 1                        | 1.786                                 |
|  |            | 97          | 0                        | 0.000                                 |
|  |            | 98          | 0                        | 0                                     |

## Fatal or Serious Injury 'Had-Been Drinking' Crashes by Month and Year - Drivers Age 70+

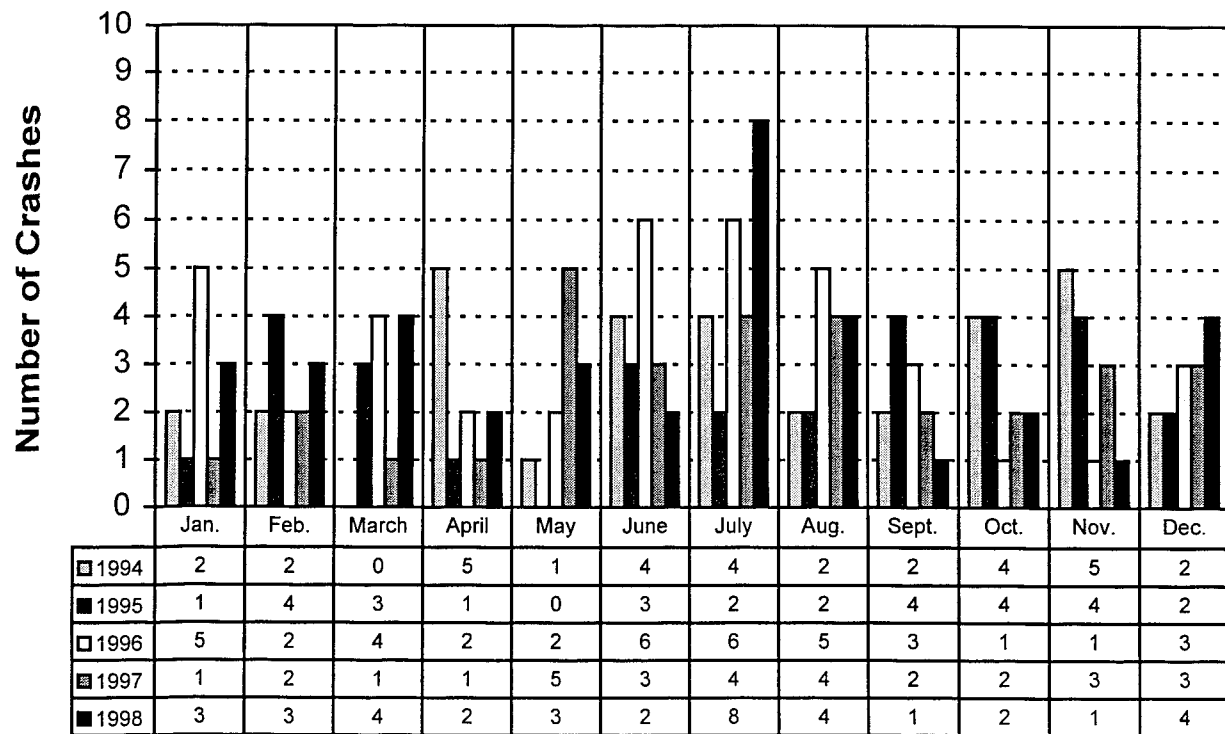


Chart 28 - Number by Month and Year

# **Fatal or Serious Injury 'Had-Been Drinking' Crashes by Day of Week and Year - Drivers Age 70+**

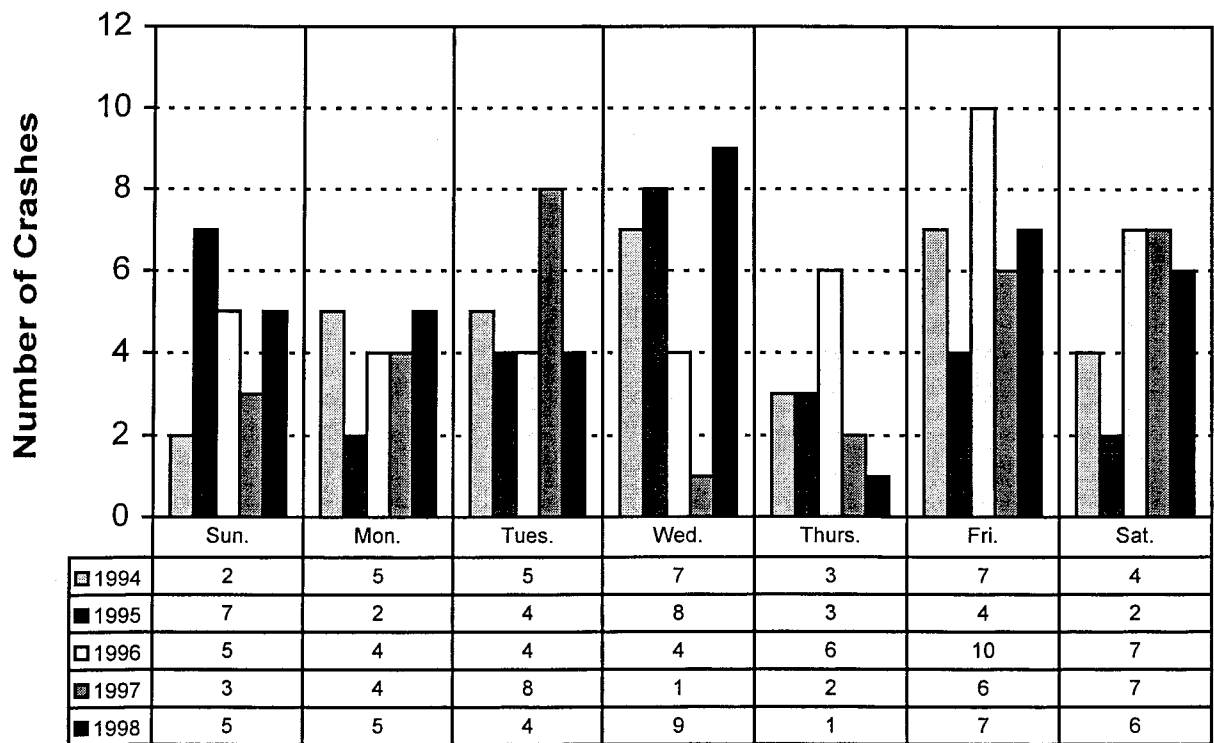


Chart 29 - Number by Day of Week and Year

# **Fatal or Serious Injury 'Had-Been Drinking' Crashes by Highway Class and Year - Drivers Age 70+**

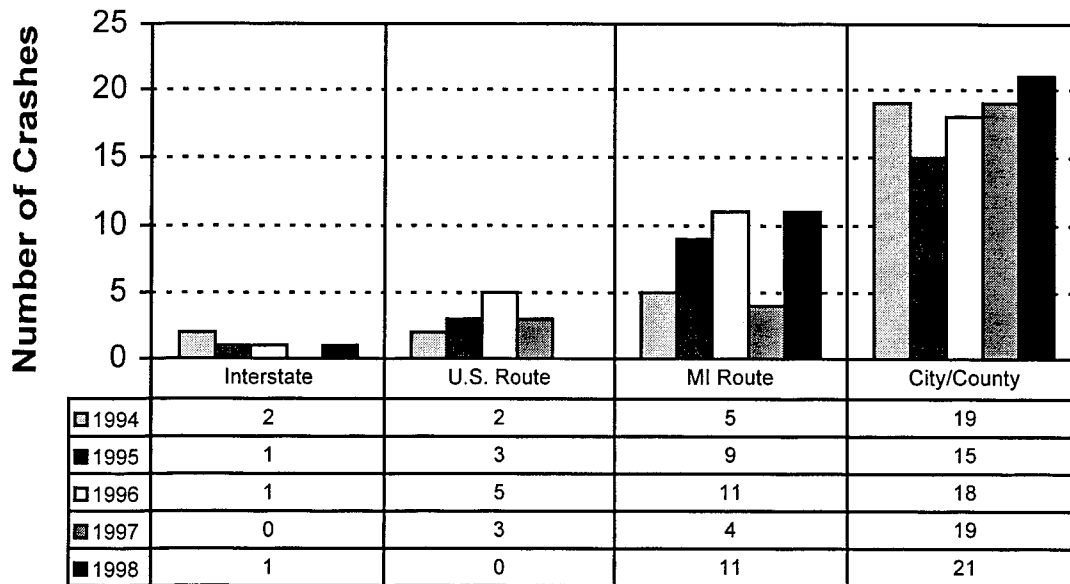


Chart 30 - Number by Highway Class and Year

# 'HAD-BEEN-DRINKING' KA CRASH OCCUPANTS

## All Drivers

Table 44 - Number by Age, Sex, Occupant Type, and Year

| Number of Occupants with Fatal or Serious Injuries from 'Had-Been-Drinking' Crashes by Age, Gender, and Occupant Type |     |      |                              |             |            |
|---|-----|------|------------------------------|-------------|------------|
| Occupant Age  | Sex | Year | Number of KA Injured Persons |             |            |
|   |     |      | Occupants                    | Pedestrians | Bicyclists |
| 0 yr  | F   | 94   | 0                            | 0           | 0          |
|   |     | 95   | 2                            | 0           | 0          |
|   |     | 96   | 1                            | 0           | 0          |
|   |     | 97   | 1                            | 0           | 0          |
|   |     | 98   | 1                            | 0           | 0          |
|   | M   | 94   | 4                            | 0           | 0          |
|   |     | 95   | 2                            | 1           | 0          |
|   |     | 96   | 0                            | 1           | 0          |
|   |     | 97   | 1                            | 0           | 0          |
|   |     | 98   | 2                            | 0           | 0          |
| 1 yr  | F   | 94   | 1                            | 0           | 0          |
|   |     | 95   | 3                            | 0           | 0          |
|   |     | 96   | 2                            | 0           | 0          |
|   |     | 97   | 1                            | 0           | 0          |
|   |     | 98   | 1                            | 0           | 0          |
|   | M   | 94   | 2                            | 0           | 0          |
|   |     | 95   | 3                            | 0           | 0          |
|   |     | 96   | 3                            | 0           | 0          |
|   |     | 97   | 2                            | 0           | 0          |
|   |     | 98   | 1                            | 0           | 0          |
| 2 yr  | F   | 94   | 4                            | 0           | 0          |
|   |     | 95   | 2                            | 0           | 0          |
|   |     | 96   | 3                            | 0           | 0          |
|   |     | 97   | 0                            | 0           | 0          |
|   |     | 98   | 3                            | 0           | 0          |
|   | M   | 94   | 5                            | 0           | 0          |
|   |     | 95   | 5                            | 1           | 0          |
|   |     | 96   | 2                            | 0           | 0          |
|   |     | 97   | 2                            | 0           | 0          |
|   |     | 98   | 2                            | 0           | 0          |
| 3 yr  | F   | 94   | 4                            | 1           | 0          |
|   |     | 95   | 6                            | 0           | 0          |
|   |     | 96   | 3                            | 0           | 0          |
|   |     | 97   | 3                            | 0           | 0          |
|   |     | 98   | 1                            | 2           | 0          |
|   | M   | 94   | 2                            | 1           | 0          |
|   |     | 95   | 7                            | 0           | 0          |
|   |     | 96   | 5                            | 0           | 0          |
|   |     | 97   | 3                            | 1           | 0          |
|   |     | 98   | 3                            | 0           | 0          |

Table 45 - Number by Age, Sex, Occupant Type, and Year (continued)

| Number of Occupants with Fatal or Serious Injuries from 'Had-Been-Drinking' Crashes by Age, Gender, and Occupant Type |     |      |                              |             |            |
|---|-----|------|------------------------------|-------------|------------|
| Occupant Age  | Sex | Year | Number of KA Injured Persons |             |            |
|   |     |      | Occupants                    | Pedestrians | Bicyclists |
| 4 yr  | F   | 94   | 3                            | 0           | 1          |
|   |     | 95   | 2                            | 0           | 0          |
|   |     | 96   | 6                            | 0           | 1          |
|   |     | 97   | 1                            | 0           | 0          |
|   |     | 98   | 0                            | 1           | 0          |
|   | M   | 94   | 6                            | 0           | 0          |
|   |     | 95   | 7                            | 0           | 0          |
|   |     | 96   | 3                            | 0           | 0          |
|   |     | 97   | 2                            | 0           | 0          |
|   |     | 98   | 2                            | 1           | 0          |
| 5-9 yr  | F   | 94   | 20                           | 0           | 1          |
|   |     | 95   | 25                           | 2           | 0          |
|   |     | 96   | 14                           | 0           | 0          |
|   |     | 97   | 14                           | 1           | 2          |
|   |     | 98   | 22                           | 1           | 0          |
|   | M   | 94   | 27                           | 4           | 2          |
|   |     | 95   | 23                           | 2           | 3          |
|   |     | 96   | 18                           | 6           | 3          |
|   |     | 97   | 17                           | 4           | 2          |
|   |     | 98   | 13                           | 2           | 2          |
| 10-15 yr  | F   | 94   | 64                           | 1           | 1          |
|   |     | 95   | 42                           | 6           | 1          |
|   |     | 96   | 37                           | 5           | 0          |
|   |     | 97   | 26                           | 4           | 1          |
|   |     | 98   | 22                           | 2           | 1          |
|   | M   | 94   | 75                           | 2           | 3          |
|   |     | 95   | 37                           | 8           | 3          |
|   |     | 96   | 30                           | 5           | 4          |
|   |     | 97   | 25                           | 2           | 1          |
|   |     | 98   | 23                           | 3           | 2          |
| 16-20 yr  | F   | 94   | 182                          | 4           | 1          |
|   |     | 95   | 178                          | 5           | 2          |
|   |     | 96   | 152                          | 5           | 0          |
|   |     | 97   | 117                          | 3           | 0          |
|   |     | 98   | 134                          | 11          | 1          |
|   | M   | 94   | 402                          | 17          | 4          |
|   |     | 95   | 351                          | 15          | 2          |
|   |     | 96   | 336                          | 12          | 3          |
|   |     | 97   | 319                          | 13          | 1          |
|   |     | 98   | 272                          | 12          | 0          |

Table 46 - Number by Age, Sex, Occupant Type, and Year (continued)

| Number of Occupants with Fatal or Serious Injuries from 'Had-Been-Drinking' Crashes by Age, Gender, and Occupant Type |     |      |                              |             |            |
|---|-----|------|------------------------------|-------------|------------|
| Occupant Age  | Sex | Year | Number of KA Injured Persons |             |            |
|   |     |      | Occupants                    | Pedestrians | Bicyclists |
| 21-34 yr  | F   | 94   | 494                          | 19          | 4          |
|   |     | 95   | 490                          | 23          | 0          |
|   |     | 96   | 387                          | 14          | 1          |
|   |     | 97   | 324                          | 9           | 0          |
|   |     | 98   | 294                          | 12          | 0          |
|   | M   | 94   | 1,271                        | 63          | 12         |
|   |     | 95   | 1,208                        | 76          | 13         |
|   |     | 96   | 1,015                        | 48          | 11         |
|   |     | 97   | 971                          | 49          | 6          |
|   |     | 98   | 913                          | 41          | 9          |
| 35-54 yr  | F   | 94   | 311                          | 15          | 1          |
|   |     | 95   | 343                          | 14          | 2          |
|   |     | 96   | 304                          | 15          | 2          |
|   |     | 97   | 269                          | 19          | 2          |
|   |     | 98   | 264                          | 19          | 1          |
|   | M   | 94   | 735                          | 46          | 18         |
|   |     | 95   | 743                          | 64          | 13         |
|   |     | 96   | 679                          | 66          | 11         |
|   |     | 97   | 631                          | 71          | 20         |
|   |     | 98   | 632                          | 70          | 17         |
| 55-64 yr  | F   | 94   | 45                           | 0           | 0          |
|   |     | 95   | 46                           | 2           | 0          |
|   |     | 96   | 25                           | 2           | 0          |
|   |     | 97   | 30                           | 1           | 0          |
|   |     | 98   | 28                           | 0           | 0          |
|   | M   | 94   | 79                           | 9           | 0          |
|   |     | 95   | 89                           | 11          | 3          |
|   |     | 96   | 81                           | 11          | 3          |
|   |     | 97   | 71                           | 8           | 2          |
|   |     | 98   | 70                           | 8           | 0          |
| 65-69 yr  | F   | 94   | 8                            | 1           | 0          |
|   |     | 95   | 18                           | 1           | 0          |
|   |     | 96   | 20                           | 0           | 0          |
|   |     | 97   | 9                            | 0           | 0          |
|   |     | 98   | 8                            | 1           | 0          |
|   | M   | 94   | 24                           | 3           | 0          |
|   |     | 95   | 24                           | 7           | 0          |
|   |     | 96   | 19                           | 6           | 0          |
|   |     | 97   | 33                           | 1           | 0          |
|   |     | 98   | 28                           | 0           | 0          |

Table 47 - Number by Age, Sex, Occupant Type, and Year (continued)

| Number of Occupants with Fatal or Serious Injuries from 'Had-Been-Drinking' Crashes by Age, Gender, and Occupant Type |     |      |                              |             |            |
|---|-----|------|------------------------------|-------------|------------|
| Occupant Age  | Sex | Year | Number of KA Injured Persons |             |            |
|   |     |      | Occupants                    | Pedestrians | Bicyclists |
| 70-74 yr  | F   | 94   | 12                           | 0           | 0          |
|   |     | 95   | 16                           | 0           | 0          |
|   |     | 96   | 9                            | 0           | 0          |
|   |     | 97   | 11                           | 2           | 0          |
|   |     | 98   | 10                           | 0           | 0          |
|   | M   | 94   | 15                           | 0           | 0          |
|   |     | 95   | 14                           | 2           | 0          |
|   |     | 96   | 20                           | 1           | 0          |
|   |     | 97   | 14                           | 4           | 1          |
|   |     | 98   | 17                           | 0           | 1          |
| 75-79 yr  | F   | 94   | 6                            | 1           | 0          |
|   |     | 95   | 4                            | 0           | 0          |
|   |     | 96   | 11                           | 0           | 0          |
|   |     | 97   | 4                            | 0           | 0          |
|   |     | 98   | 7                            | 0           | 0          |
|   | M   | 94   | 10                           | 1           | 0          |
|   |     | 95   | 17                           | 2           | 0          |
|   |     | 96   | 8                            | 1           | 0          |
|   |     | 97   | 12                           | 1           | 0          |
|   |     | 98   | 6                            | 1           | 0          |
| 80-84 yr  | F   | 94   | 4                            | 1           | 0          |
|   |     | 95   | 1                            | 0           | 0          |
|   |     | 96   | 3                            | 0           | 0          |
|   |     | 97   | 4                            | 0           | 0          |
|   |     | 98   | 6                            | 0           | 0          |
|   | M   | 94   | 8                            | 1           | 0          |
|   |     | 95   | 3                            | 0           | 0          |
|   |     | 96   | 14                           | 1           | 0          |
|   |     | 97   | 4                            | 0           | 0          |
|   |     | 98   | 7                            | 0           | 0          |
| 85-89 yr  | F   | 94   | 2                            | 0           | 0          |
|   |     | 95   | 1                            | 0           | 0          |
|   |     | 97   | 6                            | 0           | 0          |
|   |     | 98   | 0                            | 0           | 0          |
|   | M   | 94   | 1                            | 0           | 0          |
|   |     | 95   | 1                            | 0           | 0          |
|   |     | 96   | 1                            | 1           | 0          |
|   |     | 97   | 1                            | 1           | 0          |
|   |     | 98   | 2                            | 0           | 0          |
|   |     |      |                              |             |            |
| 90+ yr  | F   | 94   | 2                            | 0           | 0          |
|   |     | 96   | 1                            | 0           | 0          |
|   |     | 98   | 0                            | 0           | 0          |
|   | M   | 96   | 2                            | 0           | 0          |
|   |     | 97   | 1                            | 0           | 0          |
|   |     | 98   | 1                            | 0           | 0          |





Table 49 - Air Bag Deployment by Seat Position and Year

| <b>Air Bag Deployment in Fatal or Serious Injury Crashes<br/>by Seat Position and Year</b> |             |                             |                                 |  |
|--|-------------|-----------------------------|---------------------------------|--|
|  | <i>Year</i> | <i>Air Bag<br/>Deployed</i> | <i>Air Bag Not<br/>Deployed</i> | <i>% of Available Air Bags<br/>that Deployed</i> |
| <i>Driver</i>  | 94          | 1281                        | 1957                            | 39.56%   |
|  | 95          | 1977                        | 2883                            | 40.68%   |
|  | 96          | 2589                        | 3365                            | 43.48%   |
|  | 97          | 2962                        | 3901                            | 43.16%   |
|  | 98          | 3285                        | 4357                            | 42.99%   |
| <i>Passenger</i>   | 94          | 98                          | 236                             | 29.34%   |
|  | 95          | 251                         | 370                             | 40.42%   |
|  | 96          | 379                         | 497                             | 43.26%   |
|  | 97          | 369                         | 487                             | 43.11%   |
|  | 98          | 541                         | 596                             | 47.58%   |

Clearly the number of vehicles equipped with air bags becoming involved in crashes is increasing quickly. We should also note that air bags only deployed in 40-50% of all crashes that resulted in death or serious injury. This emphasizes the point that air bags are no magic cure, and this should be made clear to the public.

Table 50 - Helmet Use by Seat Position and Year

| <b>Motorcycle Helmet Use in Fatal or Serious Injury Crashes by Seat Position and Year</b> |             |                    |                        |                         |
|---|-------------|--------------------|------------------------|-------------------------|
|   | <i>Year</i> | <i>Helmet Worn</i> | <i>Helmet Not Worn</i> | <i>% Wearing Helmet</i> |
| <i>Driver</i>   | 94          | 598                | 85                     | 87.55%                  |
|   | 95          | 569                | 60                     | 90.46%                  |
|   | 96          | 533                | 75                     | 87.66%                  |
|   | 97          | 537                | 65                     | 89.20%                  |
|   | 98          | 624                | 81                     | 88.51%                  |
| <i>Passenger</i>  | 94          | 85                 | 20                     | 80.95%                  |
|   | 95          | 80                 | 15                     | 84.21%                  |
|   | 96          | 77                 | 16                     | 82.80%                  |
|   | 97          | 76                 | 12                     | 86.36%                  |
|   | 98          | 97                 | 15                     | 86.61%                  |

Helmet use is high and relatively stable.

Table 51 - Belt use by Seat Position, Air Bag Deployment, and Year

| <b>Belt Use Among Persons Involved in Fatal or Serious Injury Crashes<br/>by Seat Position, Air Bag Deployment, and Year</b> |             |                                 |                                     |                                     |                                  |                                      |                                      |
|--|-------------|---------------------------------|-------------------------------------|-------------------------------------|----------------------------------|--------------------------------------|--------------------------------------|
|  | <i>Year</i> | <i>Belted, Bag<br/>Deployed</i> | <i>Not Belted, Bag<br/>Deployed</i> | <i>% Belt Use, Bag<br/>Deployed</i> | <i>Belted, No<br/>Deployment</i> | <i>Not Belted, No<br/>Deployment</i> | <i>% Belt Use, No<br/>Deployment</i> |
| <i>Driver</i>  | 94          | 993                             | 222                                 | 81.73%                              | 1552                             | 222                                  | 87.49%                               |
|  | 95          | 1524                            | 314                                 | 82.92%                              | 2287                             | 346                                  | 86.86%                               |
|  | 96          | 2065                            | 339                                 | 85.90%                              | 2779                             | 364                                  | 88.42%                               |
|  | 97          | 2291                            | 427                                 | 84.29%                              | 3185                             | 450                                  | 87.62%                               |
|  | 98          | 2492                            | 521                                 | 82.71%                              | 3616                             | 457                                  | 88.78%                               |
| <i>Passenger</i>   | 94          | 77                              | 16                                  | 82.80%                              | 172                              | 49                                   | 77.83%                               |
|  | 95          | 194                             | 44                                  | 81.51%                              | 255                              | 85                                   | 75.00%                               |
|  | 96          | 296                             | 64                                  | 82.22%                              | 361                              | 101                                  | 78.14%                               |
|  | 97          | 273                             | 68                                  | 80.06%                              | 346                              | 110                                  | 75.88%                               |
|  | 98          | 405                             | 99                                  | 80.36%                              | 403                              | 141                                  | 74.22%                               |

Police-reported belt use was the same regardless of whether the crash caused the air bag to deploy or not.

Table 52 - Belt Use by Occupant Age, Sex, Injury, Seat Position, and Year

| Belt Use Among Persons Involved in Fatal or Serious Injury Crashes<br>by Occupant Age, Sex, Injury, Seat Position, and Year |                      |     |      |                      |             |                  |               |                          |             |                  |               |
|---|----------------------|-----|------|----------------------|-------------|------------------|---------------|--------------------------|-------------|------------------|---------------|
| Age   | Occupant<br>Position | Sex | Year | KA Injured Occupants |             |                  |               | Not KA Injured Occupants |             |                  |               |
|   |                      |     |      | Belt<br>Used         | CRD<br>Used | Belt Not<br>Used | % Belt<br>Use | Belt<br>Used             | CRD<br>Used | Belt Not<br>Used | % Belt<br>Use |
| 0 yr  | Driver/Errors        | F   | 94   | 0                    | 0           | 0                | 0.00%         | 2                        | 0           | 0                | 100.00%       |
|   |                      |     | 96   | 0                    | 0           | 0                | 0.00%         | 1                        | 0           | 0                | 100.00%       |
|   |                      |     | 97   | 1                    | 0           | 0                | 100.00%       | 0                        | 0           | 0                | 0.00%         |
|   |                      |     | 98   | 0                    | 0           | 0                | 0.00%         | 0                        | 0           | 0                | 0.00%         |
|   |                      | M   | 94   | 0                    | 0           | 4                | 0.00%         | 6                        | 0           | 0                | 100.00%       |
|   |                      |     | 95   | 2                    | 0           | 0                | 100.00%       | 1                        | 0           | 0                | 100.00%       |
|   |                      |     | 96   | 0                    | 0           | 1                | 0.00%         | 0                        | 0           | 0                | 0.00%         |
|   |                      |     | 97   | 1                    | 0           | 1                | 50.00%        | 3                        | 0           | 1                | 75.00%        |
|   | Center front         | F   | 98   | 3                    | 0           | 0                | 100.00%       | 1                        | 0           | 0                | 100.00%       |
|   |                      |     | 94   | 0                    | 0           | 0                | 0.00%         | 0                        | 0           | 2                | 0.00%         |
|   |                      |     | 95   | 0                    | 0           | 1                | 0.00%         | 0                        | 1           | 0                | 100.00%       |
|   |                      |     | 98   | 0                    | 0           | 0                | 0.00%         | 0                        | 1           | 0                | 100.00%       |
|   |                      | M   | 94   | 1                    | 0           | 1                | 50.00%        | 0                        | 1           | 0                | 100.00%       |
|   |                      |     | 98   | 0                    | 1           | 0                | 100.00%       | 0                        | 0           | 0                | 0.00%         |
|   | Right front          | F   | 94   | 0                    | 3           | 0                | 100.00%       | 1                        | 3           | 0                | 100.00%       |
|   |                      |     | 95   | 0                    | 2           | 3                | 40.00%        | 1                        | 3           | 1                | 80.00%        |
|   |                      |     | 96   | 2                    | 5           | 1                | 87.50%        | 0                        | 0           | 1                | 0.00%         |
|   |                      |     | 97   | 0                    | 0           | 1                | 0.00%         | 0                        | 3           | 0                | 100.00%       |
|   |                      | M   | 98   | 0                    | 0           | 1                | 0.00%         | 0                        | 1           | 1                | 50.00%        |
|   |                      |     | 94   | 1                    | 4           | 4                | 55.56%        | 0                        | 3           | 0                | 100.00%       |
|   |                      |     | 95   | 1                    | 3           | 2                | 66.67%        | 0                        | 2           | 1                | 66.67%        |
|   |                      |     | 96   | 1                    | 1           | 2                | 50.00%        | 0                        | 5           | 0                | 100.00%       |
|   | Left rear            | F   | 97   | 1                    | 2           | 0                | 100.00%       | 0                        | 0           | 0                | 0.00%         |
|   |                      |     | 98   | 0                    | 0           | 1                | 0.00%         | 1                        | 1           | 0                | 100.00%       |
|   |                      |     | 94   | 1                    | 0           | 1                | 50.00%        | 2                        | 4           | 0                | 100.00%       |
|   |                      |     | 95   | 0                    | 2           | 0                | 100.00%       | 0                        | 3           | 0                | 100.00%       |
|   |                      | M   | 96   | 1                    | 4           | 1                | 83.33%        | 1                        | 5           | 0                | 100.00%       |
|   |                      |     | 97   | 0                    | 1           | 1                | 50.00%        | 0                        | 1           | 0                | 100.00%       |
|   |                      |     | 98   | 0                    | 1           | 1                | 50.00%        | 1                        | 2           | 1                | 75.00%        |
|   |                      |     | 94   | 0                    | 0           | 0                | 0.00%         | 0                        | 4           | 1                | 80.00%        |
|   | Center rear          | F   | 95   | 0                    | 1           | 1                | 50.00%        | 0                        | 1           | 0                | 100.00%       |
|   |                      |     | 96   | 0                    | 2           | 1                | 66.67%        | 2                        | 1           | 0                | 100.00%       |
|   |                      |     | 97   | 0                    | 3           | 0                | 100.00%       | 0                        | 5           | 0                | 100.00%       |
|   |                      |     | 98   | 0                    | 0           | 0                | 0.00%         | 0                        | 1           | 0                | 100.00%       |
|   |                      |     | 94   | 0                    | 0           | 0                | 0.00%         | 0                        | 5           | 0                | 100.00%       |
|   | Center rear          | F   | 95   | 0                    | 1           | 0                | 100.00%       | 1                        | 3           | 0                | 100.00%       |
|   |                      |     | 96   | 0                    | 1           | 0                | 100.00%       | 0                        | 3           | 0                | 100.00%       |
|   |                      |     | 97   | 0                    | 2           | 0                | 100.00%       | 0                        | 1           | 0                | 100.00%       |
|   |                      |     | 98   | 0                    | 1           | 0                | 100.00%       | 1                        | 4           | 0                | 100.00%       |
|   |                      |     | 94   | 0                    | 1           | 0                | 100.00%       | 1                        | 4           | 0                | 100.00%       |

**Belt Use Among Persons Involved in Fatal or Serious Injury Crashes  
by Occupant Age, Sex, Injury, Seat Position, and Year**

| Age  | Occupant Position | Sex | Year | KA Injured Occupants |          |               |            | Not KA Injured Occupants |          |               |            |
|------|-------------------|-----|------|----------------------|----------|---------------|------------|--------------------------|----------|---------------|------------|
|      |                   |     |      | Belt Used            | CRD Used | Belt Not Used | % Belt Use | Belt Used                | CRD Used | Belt Not Used | % Belt Use |
|      |                   | M   | 94   | 1                    | 0        | 1             | 50.00%     | 0                        | 1        | 1             | 50.00%     |
|      |                   |     | 95   | 0                    | 0        | 0             | 0.00%      | 0                        | 4        | 0             | 100.00%    |
|      |                   |     | 96   | 0                    | 1        | 1             | 50.00%     | 1                        | 2        | 0             | 100.00%    |
|      |                   |     | 97   | 1                    | 2        | 0             | 100.00%    | 0                        | 1        | 0             | 100.00%    |
|      |                   |     | 98   | 0                    | 1        | 0             | 100.00%    | 0                        | 5        | 0             | 100.00%    |
|      | Right rear        | F   | 94   | 0                    | 0        | 0             | 0.00%      | 0                        | 8        | 0             | 100.00%    |
|      |                   |     | 95   | 0                    | 0        | 1             | 0.00%      | 0                        | 2        | 0             | 100.00%    |
|      |                   |     | 96   | 0                    | 1        | 0             | 100.00%    | 0                        | 2        | 0             | 100.00%    |
|      |                   |     | 97   | 0                    | 2        | 1             | 66.67%     | 0                        | 3        | 0             | 100.00%    |
|      |                   |     | 98   | 0                    | 2        | 0             | 100.00%    | 0                        | 3        | 0             | 100.00%    |
|      |                   | M   | 94   | 0                    | 2        | 1             | 66.67%     | 0                        | 3        | 0             | 100.00%    |
|      |                   |     | 95   | 0                    | 3        | 1             | 75.00%     | 1                        | 4        | 1             | 83.33%     |
|      |                   |     | 96   | 0                    | 2        | 0             | 100.00%    | 0                        | 7        | 0             | 100.00%    |
|      |                   |     | 97   | 0                    | 0        | 0             | 0.00%      | 0                        | 3        | 0             | 100.00%    |
|      |                   |     | 98   | 1                    | 1        | 0             | 100.00%    | 0                        | 5        | 0             | 100.00%    |
| 1 yr | Driver/Errors     | F   | 94   | 0                    | 0        | 0             | 0.00%      | 1                        | 0        | 0             | 100.00%    |
|      |                   |     | 97   | 0                    | 0        | 0             | 0.00%      | 0                        | 1        | 0             | 100.00%    |
|      |                   |     | 98   | 0                    | 0        | 0             | 0.00%      | 0                        | 0        | 0             | 0.00%      |
|      |                   | M   | 94   | 0                    | 0        | 1             | 0.00%      | 1                        | 0        | 0             | 100.00%    |
|      |                   |     | 98   | 0                    | 0        | 0             | 0.00%      | 1                        | 0        | 0             | 100.00%    |
|      | Center front      | F   | 94   | 0                    | 0        | 0             | 0.00%      | 0                        | 1        | 2             | 33.33%     |
|      |                   |     | 95   | 0                    | 0        | 0             | 0.00%      | 1                        | 1        | 1             | 66.67%     |
|      |                   |     | 96   | 0                    | 0        | 1             | 0.00%      | 0                        | 0        | 0             | 0.00%      |
|      |                   |     | 97   | 0                    | 0        | 1             | 0.00%      | 1                        | 0        | 0             | 100.00%    |
|      |                   |     | 98   | 0                    | 1        | 0             | 100.00%    | 0                        | 0        | 1             | 0.00%      |
|      |                   | M   | 94   | 0                    | 0        | 0             | 0.00%      | 0                        | 1        | 0             | 100.00%    |
|      |                   |     | 95   | 0                    | 0        | 1             | 0.00%      | 0                        | 2        | 0             | 100.00%    |
|      |                   |     | 96   | 1                    | 0        | 1             | 50.00%     | 1                        | 0        | 0             | 100.00%    |
|      |                   |     | 97   | 0                    | 0        | 0             | 0.00%      | 1                        | 0        | 0             | 100.00%    |
|      |                   |     | 98   | 0                    | 1        | 0             | 100.00%    | 0                        | 0        | 0             | 0.00%      |
|      | Right front       | F   | 94   | 1                    | 0        | 1             | 50.00%     | 2                        | 4        | 0             | 100.00%    |
|      |                   |     | 95   | 2                    | 0        | 1             | 66.67%     | 1                        | 3        | 2             | 66.67%     |
|      |                   |     | 96   | 0                    | 2        | 0             | 100.00%    | 0                        | 2        | 1             | 66.67%     |
|      |                   |     | 97   | 0                    | 0        | 0             | 0.00%      | 0                        | 2        | 1             | 66.67%     |
|      |                   |     | 98   | 0                    | 0        | 1             | 0.00%      | 0                        | 0        | 0             | 0.00%      |
|      |                   | M   | 94   | 5                    | 3        | 1             | 88.89%     | 2                        | 2        | 1             | 80.00%     |
|      |                   |     | 95   | 0                    | 1        | 1             | 50.00%     | 0                        | 6        | 1             | 85.71%     |
|      |                   |     | 96   | 2                    | 1        | 0             | 100.00%    | 0                        | 2        | 2             | 50.00%     |
|      |                   |     | 97   | 1                    | 0        | 1             | 50.00%     | 1                        | 1        | 1             | 66.67%     |
|      |                   |     | 98   | 0                    | 0        | 0             | 0.00%      | 0                        | 1        | 0             | 100.00%    |
|      | Left rear         | F   | 94   | 1                    | 0        | 0             | 100.00%    | 3                        | 4        | 0             | 100.00%    |

| Belt Use Among Persons Involved in Fatal or Serious Injury Crashes<br>by Occupant Age, Sex, Injury, Seat Position, and Year |                      |             |      |                      |             |                  |               |                          |             |                  |               |
|---|----------------------|-------------|------|----------------------|-------------|------------------|---------------|--------------------------|-------------|------------------|---------------|
| Age   | Occupant<br>Position | Sex         | Year | KA Injured Occupants |             |                  |               | Not KA Injured Occupants |             |                  |               |
|   |                      |             |      | Belt<br>Used         | CRD<br>Used | Belt Not<br>Used | % Belt<br>Use | Belt<br>Used             | CRD<br>Used | Belt Not<br>Used | % Belt<br>Use |
|   |                      |             | 95   | 0                    | 2           | 0                | 100.00%       | 1                        | 3           | 2                | 66.67%        |
|   |                      |             | 96   | 1                    | 4           | 0                | 100.00%       | 1                        | 4           | 0                | 100.00%       |
|   |                      |             | 97   | 0                    | 0           | 0                | 0.00%         | 1                        | 7           | 0                | 100.00%       |
|   |                      |             | 98   | 1                    | 1           | 0                | 100.00%       | 0                        | 2           | 0                | 100.00%       |
|   |                      | M           | 94   | 1                    | 2           | 0                | 100.00%       | 1                        | 1           | 0                | 100.00%       |
|   |                      |             | 95   | 0                    | 1           | 0                | 100.00%       | 0                        | 2           | 0                | 100.00%       |
|   |                      |             | 96   | 0                    | 6           | 0                | 100.00%       | 1                        | 1           | 1                | 66.67%        |
|   |                      |             | 97   | 0                    | 0           | 0                | 0.00%         | 0                        | 9           | 0                | 100.00%       |
|   |                      |             | 98   | 0                    | 2           | 1                | 66.67%        | 0                        | 6           | 0                | 100.00%       |
|   |                      | Center rear | 94   | 3                    | 0           | 1                | 75.00%        | 1                        | 0           | 0                | 100.00%       |
|   |                      |             | 95   | 0                    | 1           | 0                | 100.00%       | 0                        | 0           | 0                | 0.00%         |
|   |                      |             | 96   | 0                    | 0           | 3                | 0.00%         | 1                        | 0           | 0                | 100.00%       |
|   |                      |             | 97   | 0                    | 2           | 0                | 100.00%       | 1                        | 4           | 0                | 100.00%       |
|   |                      |             | 98   | 0                    | 0           | 2                | 0.00%         | 0                        | 2           | 0                | 100.00%       |
|   |                      |             | 94   | 1                    | 2           | 0                | 100.00%       | 0                        | 4           | 0                | 100.00%       |
|   |                      |             | 95   | 0                    | 4           | 1                | 80.00%        | 1                        | 5           | 2                | 75.00%        |
|   |                      |             | 96   | 0                    | 2           | 2                | 50.00%        | 0                        | 1           | 1                | 50.00%        |
|   |                      |             | 97   | 0                    | 1           | 0                | 100.00%       | 0                        | 1           | 0                | 100.00%       |
|   |                      |             | 98   | 0                    | 1           | 0                | 100.00%       | 0                        | 6           | 0                | 100.00%       |
|   | Right rear           | F           | 94   | 4                    | 2           | 2                | 75.00%        | 0                        | 5           | 2                | 71.43%        |
|   |                      |             | 95   | 0                    | 3           | 0                | 100.00%       | 0                        | 2           | 0                | 100.00%       |
|   |                      |             | 96   | 0                    | 2           | 0                | 100.00%       | 1                        | 3           | 0                | 100.00%       |
|   |                      |             | 97   | 1                    | 0           | 1                | 50.00%        | 0                        | 4           | 1                | 80.00%        |
|   |                      |             | 98   | 2                    | 2           | 2                | 66.67%        | 0                        | 6           | 0                | 100.00%       |
|   |                      | M           | 94   | 0                    | 1           | 2                | 33.33%        | 0                        | 1           | 0                | 100.00%       |
|   |                      |             | 95   | 0                    | 2           | 0                | 100.00%       | 0                        | 8           | 1                | 88.89%        |
|   |                      |             | 96   | 1                    | 5           | 1                | 85.71%        | 1                        | 5           | 0                | 100.00%       |
|   |                      |             | 97   | 0                    | 0           | 0                | 0.00%         | 2                        | 5           | 1                | 87.50%        |
|   |                      |             | 98   | 2                    | 2           | 0                | 100.00%       | 0                        | 2           | 0                | 100.00%       |
| 2 yr  | Driver/Errors        | F           | 94   | 1                    | 0           | 0                | 100.00%       | 1                        | 0           | 0                | 100.00%       |
|   |                      |             | 98   | 0                    | 0           | 0                | 0.00%         | 0                        | 0           | 0                | 0.00%         |
|   |                      | M           | 95   | 0                    | 0           | 1                | 0.00%         | 0                        | 0           | 0                | 0.00%         |
|   |                      |             | 97   | 0                    | 0           | 0                | 0.00%         | 0                        | 0           | 1                | 0.00%         |
|   |                      |             | 98   | 0                    | 0           | 0                | 0.00%         | 0                        | 0           | 0                | 0.00%         |
|   | Center front         | F           | 94   | 0                    | 1           | 2                | 33.33%        | 0                        | 1           | 0                | 100.00%       |
|   |                      |             | 95   | 0                    | 0           | 1                | 0.00%         | 2                        | 0           | 2                | 50.00%        |
|   |                      |             | 96   | 0                    | 0           | 0                | 0.00%         | 0                        | 1           | 0                | 100.00%       |
|   |                      |             | 98   | 0                    | 0           | 1                | 0.00%         | 1                        | 0           | 0                | 100.00%       |
|   |                      | M           | 94   | 0                    | 0           | 2                | 0.00%         | 0                        | 1           | 0                | 100.00%       |
|   |                      |             | 95   | 1                    | 0           | 0                | 100.00%       | 0                        | 0           | 0                | 0.00%         |
|   |                      |             | 96   | 1                    | 0           | 1                | 50.00%        | 1                        | 0           | 2                | 33.33%        |

| Belt Use Among Persons Involved in Fatal or Serious Injury Crashes<br>by Occupant Age, Sex, Injury, Seat Position, and Year |                      |     |      |                      |             |                  |               |                          |             |                  |               |
|---|----------------------|-----|------|----------------------|-------------|------------------|---------------|--------------------------|-------------|------------------|---------------|
| Age   | Occupant<br>Position | Sex | Year | KA Injured Occupants |             |                  |               | Not KA Injured Occupants |             |                  |               |
|   |                      |     |      | Belt<br>Used         | CRD<br>Used | Belt Not<br>Used | % Belt<br>Use | Belt<br>Used             | CRD<br>Used | Belt Not<br>Used | % Belt<br>Use |
|   |                      |     |      |                      |             |                  |               |                          |             |                  |               |
|   |                      |     | 97   | 0                    | 0           | 0                | 0.00%         | 0                        | 0           | 1                | 0.00%         |
|   |                      |     | 98   | 0                    | 0           | 0                | 0.00%         | 0                        | 0           | 0                | 0.00%         |
|   | Right front          | F   | 94   | 2                    | 1           | 0                | 100.00%       | 1                        | 1           | 1                | 66.67%        |
|   |                      |     | 95   | 1                    | 1           | 7                | 22.22%        | 0                        | 2           | 1                | 66.67%        |
|   |                      |     | 96   | 2                    | 0           | 2                | 50.00%        | 3                        | 1           | 1                | 80.00%        |
|   |                      |     | 97   | 0                    | 0           | 0                | 0.00%         | 1                        | 2           | 0                | 100.00%       |
|   |                      |     | 98   | 0                    | 1           | 3                | 25.00%        | 0                        | 0           | 0                | 0.00%         |
|   |                      | M   | 94   | 4                    | 1           | 3                | 62.50%        | 3                        | 0           | 2                | 60.00%        |
|   |                      |     | 95   | 4                    | 2           | 2                | 75.00%        | 0                        | 2           | 1                | 66.67%        |
|   |                      |     | 96   | 1                    | 1           | 2                | 50.00%        | 2                        | 0           | 0                | 100.00%       |
|   |                      |     | 97   | 2                    | 1           | 2                | 60.00%        | 0                        | 1           | 1                | 50.00%        |
|   |                      |     | 98   | 0                    | 0           | 0                | 0.00%         | 0                        | 0           | 3                | 0.00%         |
|   | Left rear            | F   | 94   | 1                    | 4           | 4                | 55.56%        | 0                        | 5           | 2                | 71.43%        |
|   |                      |     | 95   | 0                    | 1           | 1                | 50.00%        | 5                        | 3           | 2                | 80.00%        |
|   |                      |     | 96   | 1                    | 4           | 2                | 71.43%        | 1                        | 3           | 1                | 80.00%        |
|   |                      |     | 97   | 3                    | 0           | 1                | 75.00%        | 1                        | 4           | 0                | 100.00%       |
|   |                      |     | 98   | 0                    | 2           | 1                | 66.67%        | 0                        | 1           | 0                | 100.00%       |
|   |                      | M   | 94   | 1                    | 1           | 0                | 100.00%       | 0                        | 7           | 0                | 100.00%       |
|   |                      |     | 95   | 3                    | 1           | 1                | 80.00%        | 3                        | 1           | 0                | 100.00%       |
|   |                      |     | 96   | 3                    | 2           | 0                | 100.00%       | 3                        | 4           | 0                | 100.00%       |
|   |                      |     | 97   | 1                    | 4           | 0                | 100.00%       | 1                        | 1           | 1                | 66.67%        |
|   |                      |     | 98   | 1                    | 1           | 1                | 66.67%        | 0                        | 4           | 3                | 57.14%        |
|   | Center rear          | F   | 94   | 1                    | 0           | 1                | 50.00%        | 1                        | 1           | 0                | 100.00%       |
|   |                      |     | 95   | 0                    | 0           | 2                | 0.00%         | 2                        | 3           | 1                | 83.33%        |
|   |                      |     | 96   | 2                    | 0           | 0                | 100.00%       | 0                        | 2           | 1                | 66.67%        |
|   |                      |     | 97   | 2                    | 0           | 0                | 100.00%       | 0                        | 3           | 0                | 100.00%       |
|   |                      |     | 98   | 1                    | 1           | 0                | 100.00%       | 1                        | 4           | 1                | 83.33%        |
|   |                      | M   | 94   | 1                    | 0           | 2                | 33.33%        | 1                        | 2           | 0                | 100.00%       |
|   |                      |     | 95   | 1                    | 0           | 1                | 50.00%        | 0                        | 2           | 1                | 66.67%        |
|   |                      |     | 96   | 2                    | 0           | 1                | 66.67%        | 0                        | 1           | 0                | 100.00%       |
|   |                      |     | 97   | 0                    | 0           | 0                | 0.00%         | 3                        | 1           | 0                | 100.00%       |
|   |                      |     | 98   | 2                    | 0           | 0                | 100.00%       | 2                        | 2           | 0                | 100.00%       |
|   | Right rear           | F   | 94   | 0                    | 2           | 0                | 100.00%       | 2                        | 4           | 0                | 100.00%       |
|   |                      |     | 95   | 0                    | 5           | 1                | 83.33%        | 1                        | 0           | 0                | 100.00%       |
|   |                      |     | 96   | 3                    | 5           | 0                | 100.00%       | 4                        | 1           | 0                | 100.00%       |
|   |                      |     | 97   | 0                    | 2           | 2                | 50.00%        | 1                        | 1           | 0                | 100.00%       |
|   |                      |     | 98   | 0                    | 3           | 0                | 100.00%       | 2                        | 2           | 0                | 100.00%       |
|   |                      | M   | 94   | 0                    | 0           | 2                | 0.00%         | 3                        | 0           | 0                | 100.00%       |
|   |                      |     | 95   | 2                    | 5           | 0                | 100.00%       | 2                        | 4           | 0                | 100.00%       |
|   |                      |     | 96   | 0                    | 2           | 2                | 50.00%        | 1                        | 2           | 1                | 75.00%        |
|   |                      |     | 97   | 1                    | 1           | 0                | 100.00%       | 2                        | 4           | 0                | 100.00%       |



| Belt Use Among Persons Involved in Fatal or Serious Injury Crashes<br>by Occupant Age, Sex, Injury, Seat Position, and Year |                      |     |      |                      |             |                  |               |                          |             |                  |               |
|---|----------------------|-----|------|----------------------|-------------|------------------|---------------|--------------------------|-------------|------------------|---------------|
| Age   | Occupant<br>Position | Sex | Year | KA Injured Occupants |             |                  |               | Not KA Injured Occupants |             |                  |               |
|   |                      |     |      | Belt<br>Used         | CRD<br>Used | Belt Not<br>Used | % Belt<br>Use | Belt<br>Used             | CRD<br>Used | Belt Not<br>Used | % Belt<br>Use |
| 3 yr  | Driver/Errors        | F   | 98   | 2                    | 2           | 2                | 66.67%        | 0                        | 3           | 0                | 100.00%       |
|   |                      |     | 94   | 0                    | 0           | 1                | 0.00%         | 0                        | 0           | 1                | 0.00%         |
|   |                      |     | 97   | 1                    | 0           | 0                | 100.00%       | 0                        | 0           | 0                | 0.00%         |
|   |                      |     | 98   | 0                    | 0           | 0                | 0.00%         | 0                        | 0           | 0                | 0.00%         |
|   |                      | M   | 95   | 1                    | 0           | 0                | 100.00%       | 0                        | 0           | 0                | 0.00%         |
|   |                      |     | 96   | 1                    | 0           | 0                | 100.00%       | 1                        | 0           | 0                | 100.00%       |
|   |                      |     | 97   | 0                    | 1           | 0                | 100.00%       | 0                        | 0           | 1                | 0.00%         |
|   |                      |     | 98   | 0                    | 0           | 0                | 0.00%         | 0                        | 0           | 0                | 0.00%         |
|   | Center front         | F   | 94   | 0                    | 0           | 1                | 0.00%         | 2                        | 0           | 0                | 100.00%       |
|   |                      |     | 95   | 1                    | 0           | 2                | 33.33%        | 1                        | 0           | 0                | 100.00%       |
|   |                      |     | 96   | 1                    | 0           | 1                | 50.00%        | 0                        | 0           | 1                | 0.00%         |
|   |                      |     | 97   | 2                    | 0           | 0                | 100.00%       | 0                        | 0           | 0                | 0.00%         |
|   |                      |     | 98   | 0                    | 0           | 0                | 0.00%         | 1                        | 0           | 0                | 100.00%       |
|   |                      | M   | 94   | 4                    | 0           | 3                | 57.14%        | 1                        | 0           | 0                | 100.00%       |
|   |                      |     | 95   | 1                    | 0           | 0                | 100.00%       | 2                        | 0           | 0                | 100.00%       |
|   |                      |     | 96   | 0                    | 0           | 1                | 0.00%         | 2                        | 0           | 1                | 66.67%        |
|   |                      |     | 97   | 2                    | 0           | 0                | 100.00%       | 0                        | 0           | 0                | 0.00%         |
|   | Right front          | F   | 98   | 1                    | 0           | 1                | 50.00%        | 0                        | 0           | 1                | 0.00%         |
|   |                      |     | 94   | 7                    | 0           | 2                | 77.78%        | 6                        | 0           | 2                | 75.00%        |
|   |                      |     | 95   | 5                    | 1           | 5                | 54.55%        | 3                        | 0           | 1                | 75.00%        |
|   |                      |     | 96   | 3                    | 0           | 2                | 60.00%        | 5                        | 1           | 1                | 85.71%        |
|   |                      |     | 97   | 4                    | 0           | 3                | 57.14%        | 2                        | 1           | 0                | 100.00%       |
|   |                      |     | 98   | 2                    | 0           | 2                | 50.00%        | 3                        | 1           | 0                | 100.00%       |
|   |                      | M   | 94   | 5                    | 0           | 1                | 83.33%        | 5                        | 3           | 1                | 88.89%        |
|   |                      |     | 95   | 6                    | 3           | 5                | 64.29%        | 2                        | 2           | 0                | 100.00%       |
|   |                      |     | 96   | 7                    | 2           | 3                | 75.00%        | 5                        | 2           | 0                | 100.00%       |
|   |                      |     | 97   | 4                    | 2           | 3                | 66.67%        | 4                        | 1           | 2                | 71.43%        |
|   | Left rear            | F   | 98   | 1                    | 1           | 0                | 100.00%       | 3                        | 1           | 0                | 100.00%       |
|   |                      |     | 94   | 3                    | 0           | 0                | 100.00%       | 3                        | 2           | 2                | 71.43%        |
|   |                      |     | 95   | 2                    | 0           | 3                | 40.00%        | 2                        | 0           | 4                | 33.33%        |
|   |                      |     | 96   | 3                    | 0           | 1                | 75.00%        | 3                        | 3           | 1                | 85.71%        |
|   |                      |     | 97   | 1                    | 1           | 0                | 100.00%       | 2                        | 0           | 0                | 100.00%       |
|   |                      |     | 98   | 1                    | 2           | 0                | 100.00%       | 2                        | 0           | 0                | 100.00%       |
|   |                      | M   | 94   | 3                    | 0           | 2                | 60.00%        | 5                        | 0           | 0                | 100.00%       |
|   |                      |     | 95   | 1                    | 1           | 1                | 66.67%        | 2                        | 4           | 2                | 75.00%        |
|   |                      |     | 96   | 7                    | 0           | 1                | 87.50%        | 5                        | 1           | 0                | 100.00%       |
|   |                      |     | 97   | 1                    | 1           | 1                | 66.67%        | 3                        | 2           | 0                | 100.00%       |
|   | Center rear          | F   | 98   | 0                    | 2           | 0                | 100.00%       | 3                        | 1           | 3                | 57.14%        |
|   |                      |     | 94   | 0                    | 0           | 0                | 0.00%         | 2                        | 0           | 1                | 66.67%        |
|   |                      |     | 95   | 2                    | 0           | 0                | 100.00%       | 3                        | 0           | 1                | 75.00%        |
|   |                      |     | 96   | 1                    | 1           | 1                | 66.67%        | 1                        | 0           | 2                | 33.33%        |

| Belt Use Among Persons Involved in Fatal or Serious Injury Crashes<br>by Occupant Age, Sex, Injury, Seat Position, and Year |                      |     |      |                      |             |                  |               |                          |             |                  |               |
|---|----------------------|-----|------|----------------------|-------------|------------------|---------------|--------------------------|-------------|------------------|---------------|
| Age   | Occupant<br>Position | Sex | Year | KA Injured Occupants |             |                  |               | Not KA Injured Occupants |             |                  |               |
|   |                      |     |      | Belt<br>Used         | CRD<br>Used | Belt Not<br>Used | % Belt<br>Use | Belt<br>Used             | CRD<br>Used | Belt Not<br>Used | % Belt<br>Use |
|   |                      |     |      |                      |             |                  |               |                          |             |                  |               |
|   |                      | M   | 97   | 0                    | 0           | 2                | 0.00%         | 1                        | 1           | 1                | 66.67%        |
|   |                      |     | 98   | 3                    | 0           | 1                | 75.00%        | 4                        | 1           | 0                | 100.00%       |
|   |                      |     | 94   | 0                    | 0           | 3                | 0.00%         | 1                        | 0           | 0                | 100.00%       |
|   |                      |     | 95   | 3                    | 2           | 1                | 83.33%        | 0                        | 1           | 0                | 100.00%       |
|   |                      |     | 96   | 2                    | 2           | 1                | 80.00%        | 1                        | 0           | 3                | 25.00%        |
|   |                      |     | 97   | 0                    | 2           | 1                | 66.67%        | 0                        | 2           | 0                | 100.00%       |
|   |                      |     | 98   | 0                    | 2           | 0                | 100.00%       | 0                        | 1           | 0                | 100.00%       |
|   |                      |     | 94   | 1                    | 2           | 2                | 60.00%        | 2                        | 3           | 0                | 100.00%       |
|   | Right rear           | F   | 95   | 2                    | 0           | 1                | 66.67%        | 4                        | 3           | 1                | 87.50%        |
|   |                      |     | 96   | 3                    | 2           | 2                | 71.43%        | 6                        | 2           | 2                | 80.00%        |
|   |                      |     | 97   | 1                    | 1           | 0                | 100.00%       | 2                        | 1           | 0                | 100.00%       |
|   |                      |     | 98   | 3                    | 0           | 0                | 100.00%       | 5                        | 4           | 1                | 90.00%        |
|   |                      |     | 94   | 5                    | 1           | 0                | 100.00%       | 2                        | 0           | 1                | 66.67%        |
|   |                      | M   | 95   | 4                    | 1           | 1                | 83.33%        | 4                        | 4           | 1                | 88.89%        |
|   |                      |     | 96   | 2                    | 3           | 2                | 71.43%        | 3                        | 3           | 1                | 85.71%        |
|   |                      |     | 97   | 1                    | 1           | 0                | 100.00%       | 4                        | 2           | 0                | 100.00%       |
|   |                      |     | 98   | 1                    | 2           | 0                | 100.00%       | 1                        | 1           | 3                | 40.00%        |
|   |                      |     | 95   | 0                    | 0           | 0                | 0.00%         | 0                        | 1           | 0                | 100.00%       |
| 4 yr  | Driver/Errors        | F   | 96   | 1                    | 0           | 0                | 100.00%       | 0                        | 0           | 0                | 0.00%         |
|   |                      |     | 98   | 0                    | 0           | 0                | 0.00%         | 0                        | 0           | 0                | 0.00%         |
|   |                      |     | 95   | 1                    | 0           | 0                | 100.00%       | 0                        | 0           | 0                | 0.00%         |
|   |                      | M   | 97   | 0                    | 0           | 1                | 0.00%         | 0                        | 0           | 0                | 0.00%         |
|   |                      |     | 98   | 1                    | 0           | 0                | 100.00%       | 0                        | 0           | 0                | 0.00%         |
|   |                      |     | 94   | 1                    | 0           | 2                | 33.33%        | 2                        | 0           | 0                | 100.00%       |
|   | Center front         | F   | 95   | 1                    | 0           | 1                | 50.00%        | 1                        | 0           | 0                | 100.00%       |
|   |                      |     | 96   | 1                    | 0           | 0                | 100.00%       | 1                        | 1           | 0                | 100.00%       |
|   |                      |     | 97   | 0                    | 0           | 0                | 0.00%         | 1                        | 0           | 0                | 100.00%       |
|   |                      |     | 98   | 0                    | 0           | 0                | 0.00%         | 0                        | 0           | 0                | 0.00%         |
|   |                      |     | 94   | 0                    | 0           | 0                | 0.00%         | 3                        | 0           | 0                | 100.00%       |
|   |                      | M   | 95   | 1                    | 0           | 0                | 100.00%       | 1                        | 0           | 0                | 100.00%       |
|   |                      |     | 96   | 0                    | 0           | 2                | 0.00%         | 0                        | 0           | 0                | 0.00%         |
|   |                      |     | 97   | 2                    | 0           | 2                | 50.00%        | 0                        | 0           | 0                | 0.00%         |
|   |                      |     | 98   | 0                    | 0           | 0                | 0.00%         | 1                        | 0           | 0                | 100.00%       |
|   |                      |     | 94   | 11                   | 0           | 2                | 84.62%        | 8                        | 0           | 5                | 61.54%        |
|   | Right front          | F   | 95   | 10                   | 2           | 4                | 75.00%        | 4                        | 0           | 2                | 66.67%        |
|   |                      |     | 96   | 8                    | 0           | 2                | 80.00%        | 8                        | 0           | 1                | 88.89%        |
|   |                      |     | 97   | 4                    | 0           | 1                | 80.00%        | 5                        | 0           | 0                | 100.00%       |
|   |                      |     | 98   | 7                    | 0           | 1                | 87.50%        | 5                        | 1           | 0                | 100.00%       |
|   |                      |     | 94   | 16                   | 0           | 1                | 94.12%        | 7                        | 1           | 2                | 80.00%        |
|   |                      | M   | 95   | 6                    | 0           | 0                | 100.00%       | 6                        | 0           | 2                | 75.00%        |
|   |                      |     | 96   | 14                   | 0           | 2                | 87.50%        | 5                        | 1           | 1                | 85.71%        |

| Belt Use Among Persons Involved in Fatal or Serious Injury Crashes<br>by Occupant Age, Sex, Injury, Seat Position, and Year |                      |     |      |                      |             |                  |               |                          |             |                  |               |
|---|----------------------|-----|------|----------------------|-------------|------------------|---------------|--------------------------|-------------|------------------|---------------|
| Age   | Occupant<br>Position | Sex | Year | KA Injured Occupants |             |                  |               | Not KA Injured Occupants |             |                  |               |
|   |                      |     |      | Belt<br>Used         | CRD<br>Used | Belt Not<br>Used | % Belt<br>Use | Belt<br>Used             | CRD<br>Used | Belt Not<br>Used | % Belt<br>Use |
|   |                      |     |      | 97                   | 98          | 99               | 00            | 97                       | 98          | 99               | 00            |
|   | Left rear            | F   | 94   | 4                    | 0           | 1                | 80.00%        | 8                        | 2           | 0                | 100.00%       |
|   |                      |     | 95   | 3                    | 0           | 1                | 75.00%        | 6                        | 0           | 1                | 85.71%        |
|   |                      |     | 96   | 2                    | 0           | 2                | 50.00%        | 3                        | 3           | 3                | 66.67%        |
|   |                      |     | 97   | 1                    | 1           | 1                | 66.67%        | 4                        | 0           | 0                | 100.00%       |
|   |                      |     | 98   | 4                    | 1           | 3                | 62.50%        | 4                        | 1           | 0                | 100.00%       |
|   |                      | M   | 99   | 0                    | 2           | 0                | 100.00%       | 2                        | 0           | 0                | 100.00%       |
|   |                      |     | 00   | 1                    | 0           | 1                | 50.00%        | 1                        | 1           | 0                | 100.00%       |
|   |                      |     | 01   | 5                    | 1           | 2                | 75.00%        | 3                        | 0           | 1                | 75.00%        |
|   |                      |     | 02   | 2                    | 2           | 0                | 100.00%       | 5                        | 2           | 0                | 100.00%       |
|   |                      |     | 03   | 2                    | 0           | 1                | 66.67%        | 4                        | 0           | 0                | 100.00%       |
|   | Center rear          | F   | 04   | 3                    | 1           | 2                | 66.67%        | 3                        | 0           | 0                | 100.00%       |
|   |                      |     | 05   | 0                    | 0           | 1                | 0.00%         | 1                        | 0           | 1                | 50.00%        |
|   |                      |     | 06   | 0                    | 1           | 2                | 33.33%        | 3                        | 0           | 0                | 100.00%       |
|   |                      |     | 07   | 4                    | 0           | 0                | 100.00%       | 1                        | 0           | 0                | 100.00%       |
|   |                      |     | 08   | 2                    | 0           | 1                | 66.67%        | 2                        | 0           | 0                | 100.00%       |
|   |                      | M   | 09   | 1                    | 0           | 2                | 33.33%        | 1                        | 0           | 0                | 100.00%       |
|   |                      |     | 10   | 1                    | 0           | 0                | 100.00%       | 1                        | 0           | 1                | 50.00%        |
|   |                      |     | 11   | 2                    | 0           | 3                | 40.00%        | 2                        | 0           | 1                | 66.67%        |
|   |                      |     | 12   | 0                    | 0           | 0                | 0.00%         | 2                        | 0           | 1                | 66.67%        |
|   |                      |     | 13   | 0                    | 1           | 2                | 33.33%        | 4                        | 0           | 1                | 80.00%        |
|   | Right rear           | F   | 14   | 3                    | 0           | 2                | 60.00%        | 2                        | 0           | 0                | 100.00%       |
|   |                      |     | 15   | 2                    | 0           | 0                | 100.00%       | 4                        | 0           | 0                | 100.00%       |
|   |                      |     | 16   | 4                    | 1           | 1                | 83.33%        | 4                        | 0           | 1                | 80.00%        |
|   |                      |     | 17   | 3                    | 0           | 2                | 60.00%        | 4                        | 1           | 1                | 83.33%        |
|   |                      |     | 18   | 3                    | 0           | 1                | 75.00%        | 2                        | 1           | 0                | 100.00%       |
|   |                      | M   | 19   | 2                    | 0           | 0                | 100.00%       | 2                        | 1           | 2                | 60.00%        |
|   |                      |     | 20   | 4                    | 0           | 1                | 80.00%        | 3                        | 0           | 1                | 75.00%        |
|   |                      |     | 21   | 1                    | 2           | 1                | 75.00%        | 5                        | 1           | 1                | 85.71%        |
|   |                      |     | 22   | 0                    | 0           | 0                | 0.00%         | 5                        | 2           | 0                | 100.00%       |
|   |                      |     | 23   | 1                    | 0           | 0                | 100.00%       | 0                        | 1           | 1                | 50.00%        |
| 5-9 yr  | Driver/Errors        | F   | 24   | 1                    | 0           | 1                | 50.00%        | 2                        | 0           | 0                | 100.00%       |
|   |                      |     | 25   | 1                    | 0           | 1                | 50.00%        | 0                        | 0           | 0                | 0.00%         |
|   |                      |     | 26   | 4                    | 0           | 0                | 100.00%       | 0                        | 0           | 0                | 0.00%         |
|   |                      |     | 27   | 0                    | 1           | 0                | 100.00%       | 1                        | 0           | 0                | 100.00%       |
|   |                      |     | 28   | 0                    | 0           | 0                | 0.00%         | 1                        | 0           | 0                | 100.00%       |
|   |                      | M   | 29   | 1                    | 0           | 0                | 100.00%       | 1                        | 0           | 0                | 100.00%       |
|   |                      |     | 30   | 1                    | 0           | 1                | 50.00%        | 0                        | 0           | 0                | 0.00%         |
|   |                      |     | 31   | 0                    | 0           | 0                | 0.00%         | 2                        | 0           | 0                | 100.00%       |
|   |                      |     | 32   | 1                    | 0           | 0                | 100.00%       | 1                        | 0           | 0                | 100.00%       |

**Belt Use Among Persons Involved in Fatal or Serious Injury Crashes  
by Occupant Age, Sex, Injury, Seat Position, and Year**

| Age | Occupant Position | Sex | Year | KA Injured Occupants |          |               |            | Not KA Injured Occupants |          |               |            |
|-----|-------------------|-----|------|----------------------|----------|---------------|------------|--------------------------|----------|---------------|------------|
|     |                   |     |      | Belt Used            | CRD Used | Belt Not Used | % Belt Use | Belt Used                | CRD Used | Belt Not Used | % Belt Use |
|     |                   |     | 98   | 1                    | 0        | 0             | 100.00%    | 4                        | 0        | 0             | 100.00%    |
|     | Center front      | F   | 94   | 2                    | 0        | 3             | 40.00%     | 1                        | 0        | 2             | 33.33%     |
|     |                   |     | 95   | 3                    | 0        | 5             | 37.50%     | 2                        | 0        | 3             | 40.00%     |
|     |                   |     | 96   | 3                    | 0        | 1             | 75.00%     | 4                        | 0        | 3             | 57.14%     |
|     |                   |     | 97   | 0                    | 0        | 2             | 0.00%      | 8                        | 0        | 4             | 66.67%     |
|     |                   |     | 98   | 1                    | 0        | 1             | 50.00%     | 1                        | 0        | 0             | 100.00%    |
|     |                   | M   | 94   | 5                    | 0        | 3             | 62.50%     | 2                        | 0        | 1             | 66.67%     |
|     |                   |     | 95   | 3                    | 0        | 4             | 42.86%     | 4                        | 1        | 3             | 62.50%     |
|     |                   |     | 96   | 4                    | 0        | 3             | 57.14%     | 5                        | 0        | 3             | 62.50%     |
|     |                   |     | 97   | 2                    | 0        | 4             | 33.33%     | 3                        | 0        | 2             | 60.00%     |
|     |                   |     | 98   | 3                    | 0        | 4             | 42.86%     | 3                        | 0        | 1             | 75.00%     |
|     | Right front       | F   | 94   | 27                   | 0        | 13            | 67.50%     | 35                       | 0        | 9             | 79.55%     |
|     |                   |     | 95   | 33                   | 1        | 15            | 69.39%     | 40                       | 0        | 5             | 88.89%     |
|     |                   |     | 96   | 37                   | 0        | 6             | 86.05%     | 24                       | 0        | 5             | 82.76%     |
|     |                   |     | 97   | 20                   | 0        | 10            | 66.67%     | 20                       | 0        | 5             | 80.00%     |
|     |                   |     | 98   | 34                   | 0        | 14            | 70.83%     | 28                       | 0        | 7             | 80.00%     |
|     |                   | M   | 94   | 28                   | 0        | 25            | 52.83%     | 26                       | 0        | 9             | 74.29%     |
|     |                   |     | 95   | 38                   | 1        | 19            | 67.24%     | 40                       | 0        | 10            | 80.00%     |
|     |                   |     | 96   | 33                   | 0        | 12            | 73.33%     | 31                       | 0        | 9             | 77.50%     |
|     |                   |     | 97   | 26                   | 0        | 11            | 70.27%     | 36                       | 0        | 1             | 97.30%     |
|     |                   |     | 98   | 28                   | 0        | 13            | 68.29%     | 23                       | 0        | 1             | 95.83%     |
|     | Left rear         | F   | 94   | 12                   | 1        | 8             | 61.91%     | 14                       | 0        | 6             | 70.00%     |
|     |                   |     | 95   | 16                   | 0        | 11            | 59.26%     | 19                       | 0        | 4             | 82.61%     |
|     |                   |     | 96   | 17                   | 0        | 6             | 73.91%     | 12                       | 0        | 8             | 60.00%     |
|     |                   |     | 97   | 18                   | 0        | 7             | 72.00%     | 24                       | 0        | 5             | 82.76%     |
|     |                   |     | 98   | 21                   | 0        | 5             | 80.77%     | 18                       | 0        | 3             | 85.71%     |
|     |                   | M   | 94   | 11                   | 0        | 8             | 57.90%     | 14                       | 1        | 3             | 83.33%     |
|     |                   |     | 95   | 17                   | 0        | 10            | 62.96%     | 18                       | 0        | 1             | 94.74%     |
|     |                   |     | 96   | 12                   | 0        | 2             | 85.71%     | 12                       | 1        | 7             | 65.00%     |
|     |                   |     | 97   | 12                   | 0        | 9             | 57.14%     | 10                       | 1        | 4             | 73.33%     |
|     |                   |     | 98   | 16                   | 0        | 7             | 69.57%     | 18                       | 0        | 3             | 85.71%     |
|     | Center rear       | F   | 94   | 4                    | 0        | 8             | 33.33%     | 10                       | 0        | 2             | 83.33%     |
|     |                   |     | 95   | 7                    | 0        | 5             | 58.33%     | 9                        | 0        | 1             | 90.00%     |
|     |                   |     | 96   | 5                    | 0        | 4             | 55.56%     | 9                        | 2        | 5             | 68.75%     |
|     |                   |     | 97   | 8                    | 0        | 2             | 80.00%     | 2                        | 0        | 3             | 40.00%     |
|     |                   |     | 98   | 9                    | 0        | 1             | 90.00%     | 9                        | 0        | 2             | 81.82%     |
|     |                   | M   | 94   | 4                    | 0        | 2             | 66.67%     | 6                        | 0        | 11            | 35.29%     |
|     |                   |     | 95   | 3                    | 0        | 7             | 30.00%     | 8                        | 0        | 4             | 66.67%     |
|     |                   |     | 96   | 4                    | 0        | 4             | 50.00%     | 7                        | 1        | 3             | 72.73%     |
|     |                   |     | 97   | 5                    | 1        | 2             | 75.00%     | 7                        | 0        | 5             | 58.33%     |
|     |                   |     | 98   | 10                   | 1        | 2             | 84.62%     | 10                       | 0        | 4             | 71.43%     |

| Belt Use Among Persons Involved in Fatal or Serious Injury Crashes<br>by Occupant Age, Sex, Injury, Seat Position, and Year |                      |     |      |                      |             |                  |               |                          |             |                  |               |
|---|----------------------|-----|------|----------------------|-------------|------------------|---------------|--------------------------|-------------|------------------|---------------|
| Age   | Occupant<br>Position | Sex | Year | KA Injured Occupants |             |                  |               | Not KA Injured Occupants |             |                  |               |
|   |                      |     |      | Belt<br>Used         | CRD<br>Used | Belt Not<br>Used | % Belt<br>Use | Belt<br>Used             | CRD<br>Used | Belt Not<br>Used | % Belt<br>Use |
| 10-15 yr  | Right rear           | F   | 94   | 8                    | 0           | 8                | 50.00%        | 16                       | 0           | 6                | 72.73%        |
|   |                      |     | 95   | 16                   | 0           | 4                | 80.00%        | 23                       | 2           | 7                | 78.13%        |
|   |                      |     | 96   | 16                   | 0           | 5                | 76.19%        | 16                       | 0           | 4                | 80.00%        |
|   |                      |     | 97   | 10                   | 0           | 7                | 58.82%        | 15                       | 1           | 4                | 80.00%        |
|   |                      |     | 98   | 17                   | 0           | 4                | 80.95%        | 18                       | 0           | 6                | 75.00%        |
|   |                      | M   | 94   | 23                   | 0           | 12               | 65.71%        | 15                       | 0           | 8                | 65.22%        |
|   |                      |     | 95   | 11                   | 0           | 11               | 50.00%        | 22                       | 1           | 2                | 92.00%        |
|   |                      |     | 96   | 16                   | 0           | 4                | 80.00%        | 22                       | 0           | 9                | 70.97%        |
|   |                      |     | 97   | 4                    | 1           | 7                | 41.67%        | 12                       | 0           | 2                | 85.71%        |
|   |                      |     | 98   | 20                   | 0           | 3                | 86.96%        | 18                       | 1           | 5                | 79.17%        |
|   | Driver/Errors        | F   | 94   | 6                    | 0           | 12               | 33.33%        | 20                       | 0           | 5                | 80.00%        |
|   |                      |     | 95   | 14                   | 0           | 13               | 51.85%        | 11                       | 0           | 5                | 68.75%        |
|   |                      |     | 96   | 9                    | 0           | 6                | 60.00%        | 14                       | 0           | 0                | 100.00%       |
|   |                      |     | 97   | 11                   | 0           | 8                | 57.90%        | 11                       | 0           | 2                | 84.62%        |
|   |                      |     | 98   | 7                    | 0           | 4                | 63.64%        | 18                       | 0           | 2                | 90.00%        |
|   |                      | M   | 94   | 15                   | 0           | 18               | 45.46%        | 16                       | 0           | 9                | 64.00%        |
|   |                      |     | 95   | 11                   | 0           | 17               | 39.29%        | 15                       | 0           | 8                | 65.22%        |
|   |                      |     | 96   | 9                    | 0           | 12               | 42.86%        | 13                       | 0           | 6                | 68.42%        |
|   |                      |     | 97   | 7                    | 1           | 10               | 44.44%        | 13                       | 1           | 6                | 70.00%        |
|   |                      |     | 98   | 13                   | 0           | 8                | 61.90%        | 17                       | 0           | 6                | 73.91%        |
|   | Center front         | F   | 94   | 5                    | 0           | 9                | 35.71%        | 3                        | 0           | 4                | 42.86%        |
|   |                      |     | 95   | 4                    | 0           | 11               | 26.67%        | 4                        | 0           | 5                | 44.44%        |
|   |                      |     | 96   | 2                    | 0           | 16               | 11.11%        | 3                        | 0           | 8                | 27.27%        |
|   |                      |     | 97   | 5                    | 0           | 4                | 55.56%        | 3                        | 0           | 3                | 50.00%        |
|   |                      |     | 98   | 2                    | 0           | 2                | 50.00%        | 3                        | 0           | 4                | 42.86%        |
|   |                      | M   | 94   | 1                    | 0           | 10               | 9.09%         | 4                        | 0           | 4                | 50.00%        |
|   |                      |     | 95   | 2                    | 0           | 10               | 16.67%        | 5                        | 0           | 6                | 45.46%        |
|   |                      |     | 96   | 2                    | 0           | 4                | 33.33%        | 3                        | 0           | 6                | 33.33%        |
|   |                      |     | 97   | 2                    | 0           | 9                | 18.18%        | 3                        | 0           | 5                | 37.50%        |
|   |                      |     | 98   | 3                    | 0           | 2                | 60.00%        | 4                        | 0           | 3                | 57.14%        |
|   | Right front          | F   | 94   | 100                  | 1           | 71               | 58.72%        | 68                       | 1           | 40               | 63.30%        |
|   |                      |     | 95   | 119                  | 0           | 62               | 65.75%        | 72                       | 0           | 20               | 78.26%        |
|   |                      |     | 96   | 89                   | 0           | 51               | 63.57%        | 74                       | 0           | 18               | 80.44%        |
|   |                      |     | 97   | 80                   | 0           | 57               | 58.39%        | 53                       | 0           | 16               | 76.81%        |
|   |                      |     | 98   | 65                   | 0           | 45               | 59.09%        | 56                       | 0           | 8                | 87.50%        |
|   |                      | M   | 94   | 73                   | 0           | 70               | 51.05%        | 63                       | 0           | 30               | 67.74%        |
|   |                      |     | 95   | 64                   | 0           | 67               | 48.86%        | 59                       | 0           | 24               | 71.08%        |
|   |                      |     | 96   | 75                   | 0           | 46               | 61.98%        | 73                       | 0           | 21               | 77.66%        |
|   |                      |     | 97   | 49                   | 0           | 22               | 69.01%        | 57                       | 1           | 17               | 77.33%        |
|   |                      |     | 98   | 47                   | 0           | 50               | 48.45%        | 58                       | 0           | 17               | 77.33%        |
|   | Left rear            | F   | 94   | 31                   | 0           | 23               | 57.41%        | 18                       | 0           | 22               | 45.00%        |

**Belt Use Among Persons Involved in Fatal or Serious Injury Crashes  
by Occupant Age, Sex, Injury, Seat Position, and Year**

| Age      | Occupant Position | Sex | Year | KA Injured Occupants |          |               |            | Not KA Injured Occupants |          |               |            |
|----------|-------------------|-----|------|----------------------|----------|---------------|------------|--------------------------|----------|---------------|------------|
|          |                   |     |      | Belt Used            | CRD Used | Belt Not Used | % Belt Use | Belt Used                | CRD Used | Belt Not Used | % Belt Use |
|          |                   |     | 95   | 15                   | 0        | 24            | 38.46%     | 27                       | 0        | 11            | 71.05%     |
|          |                   |     | 96   | 18                   | 0        | 20            | 47.37%     | 14                       | 0        | 19            | 42.42%     |
|          |                   |     | 97   | 10                   | 0        | 16            | 38.46%     | 20                       | 0        | 8             | 71.43%     |
|          |                   |     | 98   | 21                   | 0        | 9             | 70.00%     | 17                       | 0        | 7             | 70.83%     |
|          |                   | M   | 94   | 14                   | 0        | 13            | 51.85%     | 15                       | 0        | 15            | 50.00%     |
|          |                   |     | 95   | 10                   | 0        | 18            | 35.71%     | 19                       | 0        | 11            | 63.33%     |
|          |                   |     | 96   | 19                   | 0        | 15            | 55.88%     | 28                       | 0        | 15            | 65.12%     |
|          |                   |     | 97   | 12                   | 0        | 5             | 70.59%     | 19                       | 0        | 6             | 76.00%     |
|          |                   |     | 98   | 8                    | 0        | 17            | 32.00%     | 14                       | 0        | 10            | 58.33%     |
|          | Center rear       | F   | 94   | 7                    | 0        | 19            | 26.92%     | 4                        | 0        | 11            | 26.67%     |
|          |                   |     | 95   | 4                    | 0        | 9             | 30.77%     | 8                        | 0        | 8             | 50.00%     |
|          |                   |     | 96   | 3                    | 0        | 9             | 25.00%     | 6                        | 0        | 8             | 42.86%     |
|          |                   |     | 97   | 5                    | 0        | 19            | 20.83%     | 7                        | 0        | 9             | 43.75%     |
|          |                   |     | 98   | 9                    | 0        | 3             | 75.00%     | 5                        | 0        | 8             | 38.46%     |
|          |                   | M   | 94   | 2                    | 0        | 11            | 15.39%     | 4                        | 0        | 10            | 28.57%     |
|          |                   |     | 95   | 4                    | 0        | 8             | 33.33%     | 5                        | 0        | 4             | 55.56%     |
|          |                   |     | 96   | 3                    | 0        | 9             | 25.00%     | 4                        | 0        | 4             | 50.00%     |
|          |                   |     | 97   | 7                    | 0        | 7             | 50.00%     | 2                        | 0        | 4             | 33.33%     |
|          |                   |     | 98   | 6                    | 0        | 10            | 37.50%     | 2                        | 0        | 2             | 50.00%     |
| 16-20 yr | Right rear        | F   | 94   | 28                   | 0        | 32            | 46.67%     | 20                       | 1        | 31            | 40.39%     |
|          |                   |     | 95   | 26                   | 0        | 25            | 50.98%     | 21                       | 0        | 15            | 58.33%     |
|          |                   |     | 96   | 25                   | 0        | 17            | 59.52%     | 26                       | 0        | 15            | 63.42%     |
|          |                   |     | 97   | 14                   | 0        | 18            | 43.75%     | 22                       | 0        | 14            | 61.11%     |
|          |                   |     | 98   | 20                   | 0        | 14            | 58.82%     | 23                       | 0        | 13            | 63.89%     |
|          |                   | M   | 94   | 22                   | 0        | 20            | 52.38%     | 18                       | 0        | 17            | 51.43%     |
|          |                   |     | 95   | 21                   | 0        | 15            | 58.33%     | 24                       | 0        | 3             | 88.89%     |
|          |                   |     | 96   | 20                   | 0        | 13            | 60.61%     | 29                       | 0        | 12            | 70.73%     |
|          |                   |     | 97   | 16                   | 0        | 11            | 59.26%     | 16                       | 1        | 12            | 58.62%     |
|          |                   |     | 98   | 17                   | 0        | 11            | 60.71%     | 20                       | 0        | 9             | 68.97%     |
|          | Driver/Errors     | F   | 94   | 526                  | 1        | 252           | 67.65%     | 570                      | 0        | 89            | 86.50%     |
|          |                   |     | 95   | 581                  | 1        | 258           | 69.29%     | 571                      | 0        | 80            | 87.71%     |
|          |                   |     | 96   | 590                  | 0        | 191           | 75.54%     | 558                      | 0        | 56            | 90.88%     |
|          |                   |     | 97   | 529                  | 0        | 170           | 75.68%     | 517                      | 0        | 63            | 89.14%     |
|          |                   |     | 98   | 459                  | 0        | 186           | 71.16%     | 508                      | 0        | 48            | 91.37%     |
|          |                   | M   | 94   | 497                  | 0        | 452           | 52.37%     | 925                      | 0        | 224           | 80.51%     |
|          |                   |     | 95   | 507                  | 0        | 414           | 55.05%     | 1004                     | 0        | 202           | 83.25%     |
|          |                   |     | 96   | 525                  | 1        | 351           | 59.98%     | 896                      | 0        | 155           | 85.25%     |
|          |                   |     | 97   | 411                  | 0        | 328           | 55.62%     | 935                      | 0        | 153           | 85.94%     |
|          |                   |     | 98   | 440                  | 0        | 319           | 57.97%     | 826                      | 0        | 125           | 86.86%     |
|          | Center front      | F   | 94   | 7                    | 0        | 15            | 31.82%     | 4                        | 0        | 7             | 36.36%     |
|          |                   |     | 95   | 10                   | 0        | 11            | 47.62%     | 8                        | 0        | 6             | 57.14%     |

| Belt Use Among Persons Involved in Fatal or Serious Injury Crashes<br>by Occupant Age, Sex, Injury, Seat Position, and Year |                      |     |      |                      |             |                  |               |                          |             |                  |               |
|---|----------------------|-----|------|----------------------|-------------|------------------|---------------|--------------------------|-------------|------------------|---------------|
| Age   | Occupant<br>Position | Sex | Year | KA Injured Occupants |             |                  |               | Not KA Injured Occupants |             |                  |               |
|   |                      |     |      | Belt<br>Used         | CRD<br>Used | Belt Not<br>Used | % Belt<br>Use | Belt<br>Used             | CRD<br>Used | Belt Not<br>Used | % Belt<br>Use |
|   |                      |     | 96   | 6                    | 0           | 12               | 33.33%        | 3                        | 0           | 9                | 25.00%        |
|   |                      |     | 97   | 7                    | 0           | 8                | 46.67%        | 4                        | 0           | 2                | 66.67%        |
|   |                      |     | 98   | 7                    | 0           | 7                | 50.00%        | 5                        | 0           | 6                | 45.46%        |
|   |                      | M   | 94   | 4                    | 0           | 11               | 26.67%        | 4                        | 0           | 11               | 26.67%        |
|   |                      |     | 95   | 1                    | 0           | 7                | 12.50%        | 2                        | 1           | 8                | 27.27%        |
|   |                      |     | 96   | 2                    | 0           | 11               | 15.39%        | 6                        | 0           | 2                | 75.00%        |
|   |                      |     | 97   | 2                    | 0           | 7                | 22.22%        | 3                        | 0           | 5                | 37.50%        |
|   |                      |     | 98   | 1                    | 0           | 12               | 7.69%         | 3                        | 0           | 1                | 75.00%        |
|   | Right front          | F   | 94   | 196                  | 0           | 161              | 54.90%        | 90                       | 0           | 56               | 61.64%        |
|   |                      |     | 95   | 160                  | 1           | 133              | 54.76%        | 124                      | 0           | 42               | 74.70%        |
|   |                      |     | 96   | 196                  | 0           | 122              | 61.64%        | 89                       | 0           | 30               | 74.79%        |
|   |                      |     | 97   | 147                  | 0           | 111              | 56.98%        | 66                       | 0           | 34               | 66.00%        |
|   |                      |     | 98   | 145                  | 0           | 98               | 59.67%        | 75                       | 0           | 34               | 68.81%        |
|   |                      | M   | 94   | 107                  | 0           | 188              | 36.27%        | 101                      | 0           | 70               | 59.06%        |
|   |                      |     | 95   | 107                  | 0           | 159              | 40.23%        | 109                      | 0           | 57               | 65.66%        |
|   |                      |     | 96   | 125                  | 0           | 156              | 44.48%        | 108                      | 0           | 69               | 61.02%        |
|   |                      |     | 97   | 102                  | 0           | 122              | 45.54%        | 92                       | 0           | 48               | 65.71%        |
|   |                      |     | 98   | 104                  | 0           | 115              | 47.49%        | 83                       | 0           | 46               | 64.34%        |
|   | Left rear            | F   | 94   | 10                   | 0           | 26               | 27.78%        | 8                        | 0           | 17               | 32.00%        |
|   |                      |     | 95   | 16                   | 0           | 15               | 51.61%        | 11                       | 0           | 12               | 47.83%        |
|   |                      |     | 96   | 13                   | 0           | 23               | 36.11%        | 10                       | 0           | 8                | 55.56%        |
|   |                      |     | 97   | 9                    | 0           | 17               | 34.62%        | 9                        | 0           | 10               | 47.37%        |
|   |                      |     | 98   | 12                   | 0           | 13               | 48.00%        | 10                       | 0           | 10               | 50.00%        |
|   |                      | M   | 94   | 5                    | 1           | 24               | 20.00%        | 14                       | 0           | 26               | 35.00%        |
|   |                      |     | 95   | 12                   | 0           | 26               | 31.58%        | 7                        | 0           | 24               | 22.58%        |
|   |                      |     | 96   | 8                    | 0           | 24               | 25.00%        | 15                       | 0           | 28               | 34.88%        |
|   |                      |     | 97   | 5                    | 0           | 20               | 20.00%        | 7                        | 1           | 17               | 32.00%        |
|   |                      |     | 98   | 7                    | 0           | 27               | 20.59%        | 14                       | 0           | 18               | 43.75%        |
|   | Center rear          | F   | 94   | 3                    | 0           | 16               | 15.79%        | 5                        | 0           | 9                | 35.71%        |
|   |                      |     | 95   | 2                    | 0           | 20               | 9.09%         | 2                        | 0           | 4                | 33.33%        |
|   |                      |     | 96   | 5                    | 0           | 14               | 26.32%        | 2                        | 0           | 7                | 22.22%        |
|   |                      |     | 97   | 3                    | 0           | 15               | 16.67%        | 4                        | 0           | 2                | 66.67%        |
|   |                      |     | 98   | 8                    | 0           | 11               | 42.11%        | 6                        | 0           | 3                | 66.67%        |
|   |                      | M   | 94   | 2                    | 0           | 19               | 9.52%         | 3                        | 0           | 10               | 23.08%        |
|   |                      |     | 95   | 2                    | 0           | 12               | 14.29%        | 0                        | 0           | 12               | 0.00%         |
|   |                      |     | 96   | 5                    | 0           | 11               | 31.25%        | 1                        | 1           | 5                | 28.57%        |
|   |                      |     | 97   | 5                    | 0           | 5                | 50.00%        | 1                        | 0           | 6                | 14.29%        |
|   |                      |     | 98   | 3                    | 0           | 9                | 25.00%        | 0                        | 0           | 9                | 0.00%         |
|   | Right rear           | F   | 94   | 15                   | 0           | 42               | 26.32%        | 8                        | 0           | 18               | 30.77%        |
|   |                      |     | 95   | 20                   | 0           | 26               | 43.48%        | 11                       | 0           | 21               | 34.38%        |
|   |                      |     | 96   | 13                   | 0           | 20               | 39.39%        | 9                        | 0           | 13               | 40.91%        |

**Belt Use Among Persons Involved in Fatal or Serious Injury Crashes  
by Occupant Age, Sex, Injury, Seat Position, and Year**

| Age       | Occupant Position | Sex | Year | KA Injured Occupants |          |               |            | Not KA Injured Occupants |          |               |            |
|-----------|-------------------|-----|------|----------------------|----------|---------------|------------|--------------------------|----------|---------------|------------|
|           |                   |     |      | Belt Used            | CRD Used | Belt Not Used | % Belt Use | Belt Used                | CRD Used | Belt Not Used | % Belt Use |
|           |                   |     | 97   | 10                   | 0        | 19            | 34.48%     | 17                       | 0        | 15            | 53.13%     |
|           |                   |     | 98   | 11                   | 0        | 19            | 36.67%     | 17                       | 0        | 16            | 51.52%     |
|           |                   |     | 94   | 15                   | 0        | 51            | 22.73%     | 7                        | 0        | 23            | 23.33%     |
|           |                   | M   | 95   | 10                   | 0        | 37            | 21.28%     | 19                       | 0        | 28            | 40.43%     |
|           |                   |     | 96   | 11                   | 0        | 41            | 21.15%     | 18                       | 0        | 26            | 40.91%     |
|           |                   |     | 97   | 6                    | 0        | 25            | 19.36%     | 12                       | 0        | 21            | 36.36%     |
|           |                   |     | 98   | 10                   | 0        | 21            | 32.26%     | 15                       | 0        | 22            | 40.54%     |
|           |                   |     |      |                      |          |               |            |                          |          |               |            |
| 21-34 yr  | Driver/Errors     | F   | 94   | 1047                 | 2        | 437           | 70.59%     | 1081                     | 0        | 128           | 89.41%     |
|           |                   |     | 95   | 1125                 | 0        | 384           | 74.55%     | 1119                     | 0        | 101           | 91.72%     |
|           |                   |     | 96   | 1049                 | 0        | 344           | 75.31%     | 1026                     | 0        | 99            | 91.20%     |
|           |                   |     | 97   | 944                  | 0        | 313           | 75.10%     | 1027                     | 0        | 101           | 91.05%     |
|           |                   |     | 98   | 818                  | 1        | 291           | 73.78%     | 887                      | 0        | 78            | 91.92%     |
|           |                   | M   | 94   | 968                  | 1        | 884           | 52.29%     | 2139                     | 0        | 413           | 83.82%     |
|           |                   |     | 95   | 984                  | 2        | 867           | 53.21%     | 2084                     | 0        | 382           | 84.51%     |
|           |                   |     | 96   | 956                  | 0        | 714           | 57.25%     | 1953                     | 0        | 267           | 87.97%     |
|           |                   |     | 97   | 770                  | 0        | 692           | 52.67%     | 1724                     | 0        | 261           | 86.85%     |
|           |                   |     | 98   | 694                  | 0        | 644           | 51.87%     | 1671                     | 0        | 235           | 87.67%     |
|           | Center front      | F   | 94   | 5                    | 0        | 9             | 35.71%     | 6                        | 0        | 6             | 50.00%     |
|           |                   |     | 95   | 6                    | 0        | 10            | 37.50%     | 4                        | 0        | 3             | 57.14%     |
|           |                   |     | 96   | 11                   | 0        | 5             | 68.75%     | 3                        | 0        | 2             | 60.00%     |
|           |                   |     | 97   | 3                    | 0        | 7             | 30.00%     | 5                        | 0        | 4             | 55.56%     |
|           |                   |     | 98   | 3                    | 0        | 6             | 33.33%     | 2                        | 0        | 2             | 50.00%     |
|           |                   | M   | 94   | 5                    | 0        | 17            | 22.73%     | 2                        | 0        | 6             | 25.00%     |
|           |                   |     | 95   | 4                    | 0        | 10            | 28.57%     | 5                        | 0        | 9             | 35.71%     |
|           |                   |     | 96   | 1                    | 0        | 9             | 10.00%     | 6                        | 0        | 7             | 46.15%     |
|           |                   |     | 97   | 1                    | 0        | 6             | 14.29%     | 1                        | 0        | 5             | 16.67%     |
|           |                   |     | 98   | 2                    | 0        | 3             | 40.00%     | 5                        | 0        | 5             | 50.00%     |
|           | Right front       | F   | 94   | 239                  | 0        | 205           | 53.83%     | 104                      | 0        | 47            | 68.87%     |
|           |                   |     | 95   | 268                  | 0        | 171           | 61.05%     | 146                      | 0        | 43            | 77.25%     |
|           |                   |     | 96   | 222                  | 1        | 149           | 59.95%     | 151                      | 0        | 36            | 80.75%     |
|           |                   |     | 97   | 184                  | 0        | 105           | 63.67%     | 97                       | 0        | 29            | 76.98%     |
| 98        |                   |     | 189  | 0                    | 95       | 66.55%        | 105        | 0                        | 27       | 79.55%        |            |
| M         |                   | 94  | 155  | 0                    | 215      | 41.89%        | 105        | 1                        | 99       | 51.71%        |            |
|           |                   | 95  | 167  | 0                    | 216      | 43.60%        | 108        | 0                        | 86       | 55.67%        |            |
|           |                   | 96  | 169  | 0                    | 165      | 50.60%        | 127        | 0                        | 63       | 66.84%        |            |
|           |                   | 97  | 122  | 0                    | 136      | 47.29%        | 102        | 0                        | 48       | 68.00%        |            |
|           |                   | 98  | 112  | 0                    | 150      | 42.75%        | 99         | 0                        | 58       | 63.06%        |            |
| Left rear | F                 | 94  | 11   | 0                    | 15       | 42.31%        | 9          | 0                        | 4        | 69.23%        |            |
|           |                   | 95  | 12   | 0                    | 25       | 32.43%        | 9          | 0                        | 15       | 37.50%        |            |
|           |                   | 96  | 13   | 0                    | 10       | 56.52%        | 9          | 0                        | 8        | 52.94%        |            |
|           |                   | 97  | 1    | 0                    | 9        | 10.00%        | 7          | 0                        | 11       | 38.89%        |            |



**Belt Use Among Persons Involved in Fatal or Serious Injury Crashes  
by Occupant Age, Sex, Injury, Seat Position, and Year**

| Age      | Occupant Position | Sex | Year | KA Injured Occupants |          |               |            | Not KA Injured Occupants |          |               |            |
|----------|-------------------|-----|------|----------------------|----------|---------------|------------|--------------------------|----------|---------------|------------|
|          |                   |     |      | Belt Used            | CRD Used | Belt Not Used | % Belt Use | Belt Used                | CRD Used | Belt Not Used | % Belt Use |
|          |                   |     |      |                      |          |               |            |                          |          |               |            |
|          |                   | M   | 98   | 6                    | 0        | 12            | 33.33%     | 5                        | 0        | 6             | 45.46%     |
|          |                   |     | 94   | 10                   | 0        | 30            | 25.00%     | 5                        | 0        | 18            | 21.74%     |
|          |                   |     | 95   | 6                    | 0        | 13            | 31.58%     | 7                        | 0        | 7             | 50.00%     |
|          |                   |     | 96   | 9                    | 0        | 27            | 25.00%     | 7                        | 0        | 9             | 43.75%     |
|          |                   |     | 97   | 1                    | 1        | 13            | 13.33%     | 6                        | 0        | 11            | 35.29%     |
|          |                   |     | 98   | 5                    | 0        | 15            | 25.00%     | 6                        | 0        | 7             | 46.15%     |
|          | Center rear       | F   | 94   | 3                    | 0        | 12            | 20.00%     | 3                        | 1        | 5             | 44.44%     |
|          |                   |     | 95   | 5                    | 0        | 7             | 41.67%     | 1                        | 0        | 4             | 20.00%     |
|          |                   |     | 96   | 0                    | 0        | 4             | 0.00%      | 0                        | 0        | 4             | 0.00%      |
|          |                   |     | 97   | 0                    | 0        | 6             | 0.00%      | 0                        | 0        | 0             | 0.00%      |
|          |                   | 98  | 2    | 0                    | 2        | 50.00%        | 0          | 0                        | 1        | 0.00%         |            |
|          |                   | M   | 94   | 4                    | 0        | 11            | 26.67%     | 3                        | 0        | 8             | 27.27%     |
|          |                   |     | 95   | 0                    | 0        | 13            | 0.00%      | 1                        | 0        | 8             | 11.11%     |
|          |                   |     | 96   | 0                    | 0        | 10            | 0.00%      | 1                        | 0        | 5             | 16.67%     |
|          | 97                |     | 2    | 0                    | 13       | 13.33%        | 2          | 0                        | 4        | 33.33%        |            |
|          | 98                | 2   | 0    | 9                    | 18.18%   | 0             | 0          | 7                        | 0.00%    |               |            |
|          | Right rear        | F   | 94   | 6                    | 0        | 19            | 24.00%     | 7                        | 0        | 12            | 36.84%     |
|          |                   |     | 95   | 10                   | 0        | 23            | 30.30%     | 12                       | 0        | 6             | 66.67%     |
|          |                   |     | 96   | 6                    | 0        | 16            | 27.27%     | 6                        | 0        | 13            | 31.58%     |
|          |                   |     | 97   | 9                    | 0        | 12            | 42.86%     | 9                        | 0        | 7             | 56.25%     |
|          |                   |     | 98   | 7                    | 0        | 15            | 31.82%     | 3                        | 0        | 7             | 30.00%     |
|          |                   | M   | 94   | 16                   | 0        | 34            | 32.00%     | 11                       | 0        | 15            | 42.31%     |
|          |                   |     | 95   | 14                   | 0        | 27            | 34.15%     | 8                        | 0        | 15            | 34.78%     |
|          |                   |     | 96   | 10                   | 0        | 23            | 30.30%     | 7                        | 0        | 19            | 26.92%     |
| 97       |                   |     | 8    | 1                    | 20       | 31.03%        | 8          | 0                        | 10       | 44.44%        |            |
| 98       |                   |     | 4    | 0                    | 18       | 18.18%        | 7          | 0                        | 13       | 35.00%        |            |
| 35-54 yr | Driver/Errors     | F   | 94   | 1083                 | 0        | 261           | 80.58%     | 1029                     | 1        | 67            | 93.89%     |
|          |                   |     | 95   | 1165                 | 1        | 290           | 80.08%     | 1102                     | 0        | 65            | 94.43%     |
|          |                   |     | 96   | 1116                 | 2        | 249           | 81.79%     | 1045                     | 0        | 70            | 93.72%     |
|          |                   |     | 97   | 1041                 | 0        | 221           | 82.49%     | 992                      | 0        | 47            | 95.48%     |
|          |                   |     | 98   | 989                  | 0        | 201           | 83.11%     | 982                      | 0        | 52            | 94.97%     |
|          |                   | M   | 94   | 849                  | 1        | 601           | 58.58%     | 1962                     | 0        | 208           | 90.42%     |
|          |                   |     | 95   | 891                  | 0        | 587           | 60.28%     | 2046                     | 0        | 237           | 89.62%     |
|          |                   |     | 96   | 957                  | 0        | 490           | 66.14%     | 1934                     | 0        | 198           | 90.71%     |
|          |                   |     | 97   | 871                  | 0        | 457           | 65.59%     | 1812                     | 1        | 143           | 92.69%     |
|          |                   |     | 98   | 835                  | 0        | 405           | 67.34%     | 1785                     | 0        | 138           | 92.82%     |
|          | Center front      | F   | 94   | 3                    | 0        | 6             | 33.33%     | 2                        | 0        | 1             | 66.67%     |
|          |                   |     | 95   | 5                    | 0        | 4             | 55.56%     | 6                        | 0        | 2             | 75.00%     |
|          |                   |     | 96   | 3                    | 0        | 6             | 33.33%     | 1                        | 0        | 2             | 33.33%     |
|          |                   |     | 97   | 7                    | 0        | 4             | 63.64%     | 1                        | 0        | 2             | 33.33%     |
|          |                   |     | 98   | 5                    | 0        | 4             | 55.56%     | 2                        | 0        | 1             | 66.67%     |

**Belt Use Among Persons Involved in Fatal or Serious Injury Crashes  
by Occupant Age, Sex, Injury, Seat Position, and Year**

| Age | Occupant Position | Sex | Year | KA Injured Occupants |          |               |            | Not KA Injured Occupants |          |               |            |
|-----|-------------------|-----|------|----------------------|----------|---------------|------------|--------------------------|----------|---------------|------------|
|     |                   |     |      | Belt Used            | CRD Used | Belt Not Used | % Belt Use | Belt Used                | CRD Used | Belt Not Used | % Belt Use |
|     |                   | M   | 94   | 2                    | 0        | 4             | 33.33%     | 3                        | 0        | 0             | 100.00%    |
|     |                   |     | 95   | 4                    | 0        | 3             | 57.14%     | 4                        | 0        | 3             | 57.14%     |
|     |                   |     | 96   | 2                    | 0        | 3             | 40.00%     | 2                        | 0        | 2             | 50.00%     |
|     |                   |     | 97   | 0                    | 0        | 3             | 0.00%      | 1                        | 0        | 0             | 100.00%    |
|     |                   |     | 98   | 0                    | 0        | 3             | 0.00%      | 1                        | 0        | 2             | 33.33%     |
|     | Right front       | F   | 94   | 265                  | 0        | 110           | 70.67%     | 121                      | 0        | 25            | 82.88%     |
|     |                   |     | 95   | 273                  | 1        | 119           | 69.72%     | 147                      | 0        | 33            | 81.67%     |
|     |                   |     | 96   | 265                  | 0        | 87            | 75.28%     | 135                      | 0        | 11            | 92.47%     |
|     |                   |     | 97   | 222                  | 0        | 67            | 76.82%     | 112                      | 0        | 14            | 88.89%     |
|     |                   |     | 98   | 201                  | 0        | 80            | 71.53%     | 110                      | 0        | 19            | 85.27%     |
|     |                   | M   | 94   | 99                   | 0        | 80            | 55.31%     | 65                       | 0        | 24            | 73.03%     |
|     |                   |     | 95   | 101                  | 0        | 78            | 56.43%     | 71                       | 0        | 32            | 68.93%     |
|     |                   |     | 96   | 93                   | 0        | 101           | 47.94%     | 72                       | 0        | 20            | 78.26%     |
|     |                   |     | 97   | 76                   | 0        | 60            | 55.88%     | 51                       | 1        | 16            | 76.47%     |
|     |                   |     | 98   | 92                   | 0        | 63            | 59.35%     | 56                       | 0        | 23            | 70.89%     |
|     | Left rear         | F   | 94   | 8                    | 0        | 9             | 47.06%     | 8                        | 0        | 2             | 80.00%     |
|     |                   |     | 95   | 8                    | 0        | 15            | 34.78%     | 12                       | 0        | 4             | 75.00%     |
|     |                   |     | 96   | 6                    | 0        | 6             | 50.00%     | 7                        | 0        | 2             | 77.78%     |
|     |                   |     | 97   | 11                   | 0        | 7             | 61.11%     | 6                        | 0        | 2             | 75.00%     |
|     |                   |     | 98   | 7                    | 0        | 7             | 50.00%     | 8                        | 0        | 6             | 57.14%     |
|     |                   | M   | 94   | 8                    | 0        | 9             | 47.06%     | 2                        | 0        | 4             | 33.33%     |
|     |                   |     | 95   | 3                    | 0        | 10            | 23.08%     | 4                        | 0        | 7             | 36.36%     |
|     |                   |     | 96   | 4                    | 0        | 2             | 66.67%     | 4                        | 0        | 4             | 50.00%     |
|     |                   |     | 97   | 4                    | 0        | 3             | 57.14%     | 4                        | 0        | 0             | 100.00%    |
|     |                   |     | 98   | 1                    | 0        | 7             | 12.50%     | 4                        | 0        | 4             | 50.00%     |
|     | Center rear       | F   | 94   | 3                    | 0        | 1             | 75.00%     | 3                        | 0        | 5             | 37.50%     |
|     |                   |     | 95   | 2                    | 0        | 6             | 25.00%     | 2                        | 0        | 2             | 50.00%     |
|     |                   |     | 96   | 2                    | 1        | 3             | 50.00%     | 1                        | 0        | 3             | 25.00%     |
|     |                   |     | 97   | 1                    | 0        | 1             | 50.00%     | 1                        | 0        | 2             | 33.33%     |
|     |                   |     | 98   | 0                    | 0        | 5             | 0.00%      | 4                        | 0        | 1             | 80.00%     |
|     |                   | M   | 94   | 0                    | 0        | 1             | 0.00%      | 1                        | 0        | 1             | 50.00%     |
|     |                   |     | 95   | 1                    | 0        | 6             | 14.29%     | 1                        | 0        | 0             | 100.00%    |
|     |                   |     | 96   | 1                    | 0        | 4             | 20.00%     | 0                        | 0        | 1             | 0.00%      |
|     |                   |     | 97   | 0                    | 0        | 3             | 0.00%      | 1                        | 0        | 1             | 50.00%     |
|     |                   |     | 98   | 0                    | 0        | 5             | 0.00%      | 2                        | 0        | 1             | 66.67%     |
|     | Right rear        | F   | 94   | 15                   | 0        | 17            | 46.88%     | 9                        | 0        | 9             | 50.00%     |
|     |                   |     | 95   | 13                   | 0        | 11            | 54.17%     | 10                       | 0        | 5             | 66.67%     |
|     |                   |     | 96   | 17                   | 1        | 15            | 54.55%     | 9                        | 0        | 3             | 75.00%     |
|     |                   |     | 97   | 9                    | 0        | 4             | 69.23%     | 12                       | 0        | 9             | 57.14%     |
|     |                   |     | 98   | 8                    | 0        | 6             | 57.14%     | 7                        | 0        | 7             | 50.00%     |
|     |                   | M   | 94   | 4                    | 0        | 9             | 30.77%     | 4                        | 0        | 9             | 30.77%     |

| Belt Use Among Persons Involved in Fatal or Serious Injury Crashes<br>by Occupant Age, Sex, Injury, Seat Position, and Year |                      |     |      |                      |             |                  |               |                          |             |                  |               |
|---|----------------------|-----|------|----------------------|-------------|------------------|---------------|--------------------------|-------------|------------------|---------------|
| Age   | Occupant<br>Position | Sex | Year | KA Injured Occupants |             |                  |               | Not KA Injured Occupants |             |                  |               |
|   |                      |     |      | Belt<br>Used         | CRD<br>Used | Belt Not<br>Used | % Belt<br>Use | Belt<br>Used             | CRD<br>Used | Belt Not<br>Used | % Belt<br>Use |
| 55-64 yr  |                      |     | 95   | 3                    | 0           | 11               | 21.43%        | 4                        | 0           | 9                | 30.77%        |
|   |                      |     | 96   | 3                    | 0           | 8                | 27.27%        | 8                        | 0           | 4                | 66.67%        |
|   |                      |     | 97   | 6                    | 1           | 12               | 36.84%        | 4                        | 1           | 2                | 71.43%        |
|   |                      |     | 98   | 5                    | 0           | 4                | 55.56%        | 6                        | 0           | 5                | 54.55%        |
|   | Driver/Errors        | F   | 94   | 211                  | 0           | 45               | 82.42%        | 210                      | 0           | 7                | 96.77%        |
|   |                      |     | 95   | 221                  | 0           | 48               | 82.16%        | 219                      | 0           | 11               | 95.22%        |
|   |                      |     | 96   | 234                  | 0           | 30               | 88.64%        | 203                      | 0           | 5                | 97.60%        |
|   |                      |     | 97   | 222                  | 0           | 34               | 86.72%        | 187                      | 0           | 8                | 95.90%        |
|   |                      |     | 98   | 240                  | 0           | 36               | 86.96%        | 184                      | 0           | 2                | 98.93%        |
|   |                      | M   | 94   | 187                  | 1           | 103              | 64.61%        | 461                      | 0           | 36               | 92.76%        |
|   |                      |     | 95   | 203                  | 0           | 103              | 66.34%        | 475                      | 0           | 39               | 92.41%        |
|   |                      |     | 96   | 197                  | 0           | 89               | 68.88%        | 413                      | 0           | 31               | 93.02%        |
|   |                      |     | 97   | 204                  | 0           | 78               | 72.34%        | 386                      | 0           | 38               | 91.04%        |
|   |                      |     | 98   | 213                  | 0           | 78               | 73.20%        | 386                      | 0           | 22               | 94.61%        |
|   | Center front         | F   | 94   | 2                    | 0           | 1                | 66.67%        | 0                        | 0           | 0                | 0.00%         |
|   |                      |     | 95   | 4                    | 0           | 0                | 100.00%       | 0                        | 0           | 0                | 0.00%         |
|   |                      |     | 96   | 1                    | 0           | 0                | 100.00%       | 1                        | 0           | 1                | 50.00%        |
|   |                      |     | 97   | 2                    | 0           | 0                | 100.00%       | 2                        | 0           | 0                | 100.00%       |
|   |                      |     | 98   | 0                    | 0           | 0                | 0.00%         | 1                        | 0           | 0                | 100.00%       |
|   |                      | M   | 94   | 0                    | 0           | 1                | 0.00%         | 1                        | 0           | 0                | 100.00%       |
|   |                      |     | 95   | 1                    | 0           | 1                | 50.00%        | 1                        | 0           | 1                | 50.00%        |
|   |                      |     | 96   | 1                    | 0           | 0                | 100.00%       | 1                        | 0           | 0                | 100.00%       |
|   |                      |     | 97   | 1                    | 0           | 0                | 100.00%       | 0                        | 0           | 0                | 0.00%         |
|   |                      |     | 98   | 0                    | 0           | 1                | 0.00%         | 0                        | 0           | 0                | 0.00%         |
|   | Right front          | F   | 94   | 101                  | 0           | 26               | 79.53%        | 55                       | 0           | 2                | 96.49%        |
|   |                      |     | 95   | 118                  | 0           | 36               | 76.62%        | 48                       | 0           | 3                | 94.12%        |
|   |                      |     | 96   | 89                   | 0           | 26               | 77.39%        | 41                       | 0           | 3                | 93.18%        |
|   |                      |     | 97   | 57                   | 0           | 12               | 82.61%        | 49                       | 0           | 1                | 98.00%        |
|   |                      |     | 98   | 70                   | 0           | 21               | 76.92%        | 40                       | 0           | 1                | 97.56%        |
|   |                      | M   | 94   | 28                   | 0           | 14               | 66.67%        | 15                       | 0           | 5                | 75.00%        |
|   |                      |     | 95   | 25                   | 0           | 10               | 71.43%        | 12                       | 0           | 0                | 100.00%       |
|   |                      |     | 96   | 31                   | 0           | 10               | 75.61%        | 14                       | 0           | 2                | 87.50%        |
|   |                      |     | 97   | 18                   | 1           | 6                | 76.00%        | 11                       | 0           | 1                | 91.67%        |
|   |                      |     | 98   | 19                   | 0           | 5                | 79.17%        | 9                        | 0           | 0                | 100.00%       |
|   | Left rear            | F   | 94   | 7                    | 0           | 2                | 77.78%        | 1                        | 0           | 2                | 33.33%        |
|   |                      |     | 95   | 5                    | 0           | 1                | 83.33%        | 6                        | 0           | 1                | 85.71%        |
|   |                      |     | 96   | 1                    | 0           | 5                | 16.67%        | 4                        | 0           | 0                | 100.00%       |
|   |                      |     | 97   | 2                    | 1           | 1                | 75.00%        | 3                        | 0           | 1                | 75.00%        |
|   |                      |     | 98   | 3                    | 0           | 2                | 60.00%        | 1                        | 0           | 0                | 100.00%       |
|   |                      | M   | 94   | 2                    | 0           | 0                | 100.00%       | 1                        | 0           | 1                | 50.00%        |
|   |                      |     | 95   | 3                    | 0           | 0                | 100.00%       | 1                        | 0           | 0                | 100.00%       |
|   |                      |     | 96   | 3                    | 0           | 0                | 100.00%       | 1                        | 0           | 0                | 100.00%       |

**Belt Use Among Persons Involved in Fatal or Serious Injury Crashes  
by Occupant Age, Sex, Injury, Seat Position, and Year**

| Age      | Occupant Position | Sex | Year | KA Injured Occupants |          |               |            | Not KA Injured Occupants |          |               |            |
|----------|-------------------|-----|------|----------------------|----------|---------------|------------|--------------------------|----------|---------------|------------|
|          |                   |     |      | Belt Used            | CRD Used | Belt Not Used | % Belt Use | Belt Used                | CRD Used | Belt Not Used | % Belt Use |
|          |                   |     | 96   | 1                    | 0        | 4             | 20.00%     | 1                        | 0        | 0             | 100.00%    |
|          |                   |     | 97   | 0                    | 0        | 1             | 0.00%      | 0                        | 0        | 0             | 0.00%      |
|          |                   |     | 98   | 1                    | 0        | 0             | 100.00%    | 0                        | 0        | 0             | 0.00%      |
|          | Center rear       | F   | 94   | 0                    | 0        | 1             | 0.00%      | 0                        | 0        | 2             | 0.00%      |
|          |                   |     | 95   | 1                    | 0        | 2             | 33.33%     | 1                        | 0        | 0             | 100.00%    |
|          |                   |     | 96   | 1                    | 0        | 2             | 33.33%     | 0                        | 0        | 0             | 0.00%      |
|          |                   |     | 97   | 1                    | 0        | 0             | 100.00%    | 0                        | 0        | 1             | 0.00%      |
|          |                   |     | 98   | 0                    | 0        | 1             | 0.00%      | 0                        | 0        | 0             | 0.00%      |
|          |                   |     | 94   | 1                    | 0        | 1             | 50.00%     | 0                        | 0        | 0             | 0.00%      |
|          |                   | M   | 95   | 0                    | 0        | 1             | 0.00%      | 0                        | 0        | 0             | 0.00%      |
|          |                   |     | 96   | 0                    | 0        | 1             | 0.00%      | 0                        | 0        | 0             | 0.00%      |
|          |                   |     | 97   | 0                    | 0        | 2             | 0.00%      | 0                        | 0        | 0             | 0.00%      |
|          |                   |     | 98   | 2                    | 0        | 0             | 100.00%    | 0                        | 0        | 0             | 0.00%      |
|          | Right rear        | F   | 94   | 7                    | 0        | 5             | 58.33%     | 2                        | 0        | 2             | 50.00%     |
|          |                   |     | 95   | 5                    | 0        | 6             | 45.46%     | 2                        | 0        | 1             | 66.67%     |
|          |                   |     | 96   | 3                    | 0        | 3             | 50.00%     | 5                        | 0        | 1             | 83.33%     |
|          |                   |     | 97   | 4                    | 0        | 2             | 66.67%     | 3                        | 0        | 0             | 100.00%    |
|          |                   |     | 98   | 3                    | 0        | 3             | 50.00%     | 0                        | 0        | 0             | 0.00%      |
|          |                   | M   | 94   | 1                    | 0        | 1             | 50.00%     | 0                        | 0        | 1             | 0.00%      |
|          |                   |     | 95   | 1                    | 0        | 0             | 100.00%    | 2                        | 0        | 0             | 100.00%    |
|          |                   |     | 96   | 0                    | 0        | 0             | 0.00%      | 3                        | 0        | 0             | 100.00%    |
|          |                   |     | 97   | 2                    | 0        | 2             | 50.00%     | 0                        | 0        | 0             | 0.00%      |
|          |                   |     | 98   | 0                    | 0        | 4             | 0.00%      | 1                        | 0        | 4             | 20.00%     |
| 65-69 yr | Driver/Errors     | F   | 94   | 92                   | 0        | 23            | 80.00%     | 88                       | 0        | 2             | 97.78%     |
|          |                   |     | 95   | 107                  | 0        | 18            | 85.60%     | 73                       | 0        | 4             | 94.81%     |
|          |                   |     | 96   | 102                  | 0        | 15            | 87.18%     | 77                       | 0        | 3             | 96.25%     |
|          |                   |     | 97   | 85                   | 0        | 18            | 82.52%     | 75                       | 0        | 4             | 94.94%     |
|          |                   |     | 98   | 85                   | 0        | 8             | 91.40%     | 57                       | 0        | 3             | 95.00%     |
|          |                   | M   | 94   | 96                   | 0        | 29            | 76.80%     | 186                      | 0        | 16            | 92.08%     |
|          |                   |     | 95   | 107                  | 0        | 41            | 72.30%     | 189                      | 0        | 9             | 95.46%     |
|          |                   |     | 96   | 85                   | 0        | 33            | 72.03%     | 161                      | 0        | 10            | 94.15%     |
|          |                   |     | 97   | 79                   | 0        | 37            | 68.10%     | 151                      | 0        | 11            | 93.21%     |
|          |                   |     | 98   | 84                   | 0        | 38            | 68.85%     | 141                      | 0        | 9             | 94.00%     |
|          | Center front      | F   | 94   | 1                    | 0        | 0             | 100.00%    | 0                        | 0        | 0             | 0.00%      |
|          |                   |     | 96   | 2                    | 0        | 0             | 100.00%    | 3                        | 0        | 0             | 100.00%    |
|          |                   |     | 98   | 0                    | 0        | 0             | 0.00%      | 0                        | 0        | 0             | 0.00%      |
|          | Right front       | M   | 98   | 0                    | 0        | 0             | 0.00%      | 0                        | 0        | 0             | 0.00%      |
|          |                   |     | 94   | 58                   | 0        | 11            | 84.06%     | 23                       | 0        | 4             | 85.19%     |
|          |                   |     | 95   | 57                   | 0        | 11            | 83.82%     | 23                       | 0        | 2             | 92.00%     |
|          |                   |     | 96   | 55                   | 0        | 11            | 83.33%     | 20                       | 0        | 1             | 95.24%     |
|          |                   |     | 97   | 36                   | 0        | 6             | 85.71%     | 22                       | 0        | 0             | 100.00%    |

**Belt Use Among Persons Involved in Fatal or Serious Injury Crashes  
by Occupant Age, Sex, Injury, Seat Position, and Year**

| Age      | Occupant Position | Sex | Year | KA Injured Occupants |          |               |            | Not KA Injured Occupants |          |               |            |
|----------|-------------------|-----|------|----------------------|----------|---------------|------------|--------------------------|----------|---------------|------------|
|          |                   |     |      | Belt Used            | CRD Used | Belt Not Used | % Belt Use | Belt Used                | CRD Used | Belt Not Used | % Belt Use |
|          |                   | M   | 98   | 40                   | 0        | 3             | 93.02%     | 15                       | 0        | 0             | 100.00%    |
|          |                   |     | 94   | 12                   | 0        | 4             | 75.00%     | 5                        | 0        | 5             | 50.00%     |
|          |                   |     | 95   | 4                    | 0        | 4             | 50.00%     | 8                        | 0        | 1             | 88.89%     |
|          |                   |     | 96   | 12                   | 0        | 0             | 100.00%    | 3                        | 0        | 2             | 60.00%     |
|          |                   |     | 97   | 10                   | 0        | 0             | 100.00%    | 1                        | 0        | 2             | 33.33%     |
|          |                   |     | 98   | 7                    | 0        | 6             | 53.85%     | 3                        | 0        | 1             | 75.00%     |
|          | Left rear         | F   | 94   | 1                    | 0        | 2             | 33.33%     | 3                        | 0        | 1             | 75.00%     |
|          |                   |     | 95   | 2                    | 0        | 3             | 40.00%     | 1                        | 0        | 1             | 50.00%     |
|          |                   |     | 96   | 1                    | 0        | 3             | 25.00%     | 2                        | 0        | 2             | 50.00%     |
|          |                   |     | 97   | 0                    | 0        | 1             | 0.00%      | 0                        | 0        | 0             | 0.00%      |
|          |                   | M   | 98   | 2                    | 0        | 2             | 50.00%     | 0                        | 0        | 0             | 0.00%      |
|          |                   |     | 94   | 1                    | 0        | 0             | 100.00%    | 1                        | 0        | 0             | 100.00%    |
|          |                   |     | 95   | 2                    | 0        | 2             | 50.00%     | 0                        | 0        | 0             | 0.00%      |
|          |                   |     | 96   | 0                    | 0        | 1             | 0.00%      | 0                        | 0        | 0             | 0.00%      |
|          | Center rear       | F   | 97   | 1                    | 0        | 0             | 100.00%    | 0                        | 0        | 0             | 0.00%      |
|          |                   |     | 98   | 0                    | 0        | 0             | 0.00%      | 1                        | 0        | 1             | 50.00%     |
|          |                   | M   | 94   | 0                    | 0        | 0             | 0.00%      | 1                        | 0        | 0             | 100.00%    |
|          |                   |     | 95   | 0                    | 0        | 1             | 0.00%      | 0                        | 0        | 0             | 0.00%      |
|          | Right rear        | F   | 96   | 0                    | 0        | 1             | 0.00%      | 0                        | 0        | 1             | 0.00%      |
|          |                   |     | 97   | 0                    | 0        | 1             | 0.00%      | 0                        | 0        | 1             | 0.00%      |
|          |                   | M   | 98   | 1                    | 0        | 0             | 100.00%    | 0                        | 0        | 0             | 0.00%      |
|          |                   |     | 94   | 0                    | 0        | 0             | 0.00%      | 1                        | 0        | 4             | 20.00%     |
|          |                   |     | 95   | 3                    | 0        | 2             | 60.00%     | 0                        | 0        | 0             | 0.00%      |
|          |                   |     | 96   | 6                    | 0        | 0             | 100.00%    | 0                        | 0        | 0             | 0.00%      |
|          |                   | F   | 97   | 1                    | 0        | 1             | 50.00%     | 4                        | 0        | 0             | 100.00%    |
|          |                   |     | 98   | 6                    | 0        | 1             | 85.71%     | 0                        | 0        | 0             | 0.00%      |
| 70-74 yr | Driver/Errors     | F   | 94   | 1                    | 0        | 0             | 100.00%    | 0                        | 0        | 0             | 0.00%      |
|          |                   |     | 95   | 1                    | 0        | 0             | 100.00%    | 0                        | 0        | 1             | 0.00%      |
|          |                   |     | 96   | 2                    | 0        | 2             | 50.00%     | 0                        | 0        | 0             | 0.00%      |
|          |                   | M   | 94   | 109                  | 0        | 20            | 84.50%     | 81                       | 0        | 1             | 98.78%     |
|          |                   |     | 95   | 115                  | 0        | 16            | 87.79%     | 61                       | 0        | 2             | 96.83%     |
|          |                   |     | 96   | 88                   | 0        | 10            | 89.80%     | 74                       | 0        | 4             | 94.87%     |
|          |                   |     | 97   | 88                   | 0        | 16            | 84.62%     | 59                       | 0        | 3             | 95.16%     |
|          |                   |     | 98   | 92                   | 0        | 17            | 84.40%     | 48                       | 0        | 3             | 94.12%     |
|          |                   | F   | 94   | 74                   | 0        | 30            | 71.15%     | 126                      | 0        | 4             | 96.92%     |
|          |                   |     | 95   | 86                   | 0        | 35            | 71.07%     | 145                      | 0        | 11            | 92.95%     |
|          |                   |     | 96   | 90                   | 0        | 31            | 74.38%     | 143                      | 0        | 8             | 94.70%     |
|          |                   |     | 97   | 85                   | 0        | 29            | 74.56%     | 104                      | 0        | 9             | 92.04%     |
|          |                   |     | 98   | 63                   | 0        | 23            | 73.26%     | 123                      | 0        | 6             | 95.35%     |
|          | Center front      | F   | 94   | 0                    | 0        | 1             | 0.00%      | 0                        | 0        | 0             | 0.00%      |

**Belt Use Among Persons Involved in Fatal or Serious Injury Crashes  
by Occupant Age, Sex, Injury, Seat Position, and Year**

| Age      | Occupant Position | Sex | Year | KA Injured Occupants |          |               |            | Not KA Injured Occupants |          |               |            |
|----------|-------------------|-----|------|----------------------|----------|---------------|------------|--------------------------|----------|---------------|------------|
|          |                   |     |      | Belt Used            | CRD Used | Belt Not Used | % Belt Use | Belt Used                | CRD Used | Belt Not Used | % Belt Use |
|          |                   | M   | 95   | 2                    | 0        | 0             | 100.00%    | 0                        | 0        | 1             | 0.00%      |
|          |                   |     | 97   | 1                    | 0        | 0             | 100.00%    | 0                        | 0        | 0             | 0.00%      |
|          |                   |     | 98   | 1                    | 0        | 0             | 100.00%    | 0                        | 0        | 0             | 0.00%      |
|          |                   |     | 98   | 0                    | 0        | 0             | 0.00%      | 0                        | 0        | 0             | 0.00%      |
|          |                   |     |      |                      |          |               |            |                          |          |               |            |
|          | Right front       | F   | 94   | 50                   | 0        | 11            | 81.97%     | 11                       | 0        | 1             | 91.67%     |
|          |                   |     | 95   | 51                   | 0        | 11            | 82.26%     | 27                       | 0        | 1             | 96.43%     |
|          |                   |     | 96   | 45                   | 0        | 4             | 91.84%     | 17                       | 0        | 0             | 100.00%    |
|          |                   |     | 97   | 36                   | 0        | 4             | 90.00%     | 23                       | 0        | 2             | 92.00%     |
|          |                   |     | 98   | 54                   | 0        | 13            | 80.60%     | 20                       | 0        | 1             | 95.24%     |
|          |                   | M   | 94   | 12                   | 0        | 2             | 85.71%     | 11                       | 0        | 3             | 78.57%     |
|          |                   |     | 95   | 13                   | 0        | 8             | 61.91%     | 4                        | 0        | 0             | 100.00%    |
|          |                   |     | 96   | 13                   | 0        | 4             | 76.47%     | 6                        | 0        | 0             | 100.00%    |
|          |                   |     | 97   | 5                    | 0        | 4             | 55.56%     | 7                        | 0        | 1             | 87.50%     |
|          |                   |     | 98   | 11                   | 0        | 0             | 100.00%    | 3                        | 0        | 0             | 100.00%    |
|          | Left rear         | F   | 94   | 3                    | 0        | 2             | 60.00%     | 0                        | 0        | 1             | 0.00%      |
|          |                   |     | 95   | 2                    | 0        | 1             | 66.67%     | 0                        | 0        | 0             | 0.00%      |
|          |                   |     | 96   | 1                    | 0        | 1             | 50.00%     | 1                        | 0        | 0             | 100.00%    |
|          |                   |     | 97   | 0                    | 0        | 2             | 0.00%      | 0                        | 0        | 0             | 0.00%      |
|          |                   |     | 98   | 1                    | 0        | 0             | 100.00%    | 0                        | 0        | 0             | 0.00%      |
|          |                   | M   | 94   | 0                    | 0        | 0             | 0.00%      | 1                        | 0        | 0             | 100.00%    |
|          |                   |     | 95   | 1                    | 0        | 0             | 100.00%    | 0                        | 0        | 0             | 0.00%      |
|          |                   |     | 98   | 0                    | 0        | 0             | 0.00%      | 0                        | 0        | 0             | 0.00%      |
|          | Center rear       | F   | 94   | 0                    | 0        | 1             | 0.00%      | 0                        | 0        | 0             | 0.00%      |
|          |                   |     | 95   | 0                    | 0        | 1             | 0.00%      | 1                        | 0        | 0             | 100.00%    |
|          |                   |     | 98   | 0                    | 0        | 0             | 0.00%      | 0                        | 0        | 0             | 0.00%      |
|          |                   | M   | 94   | 1                    | 0        | 0             | 100.00%    | 0                        | 0        | 0             | 0.00%      |
|          |                   |     | 98   | 0                    | 0        | 0             | 0.00%      | 0                        | 0        | 0             | 0.00%      |
|          | Right rear        | F   | 94   | 1                    | 0        | 2             | 33.33%     | 2                        | 0        | 0             | 100.00%    |
|          |                   |     | 95   | 3                    | 0        | 4             | 42.86%     | 2                        | 0        | 3             | 40.00%     |
|          |                   |     | 96   | 3                    | 0        | 4             | 42.86%     | 2                        | 0        | 0             | 100.00%    |
|          |                   |     | 97   | 1                    | 0        | 1             | 50.00%     | 1                        | 0        | 0             | 100.00%    |
|          |                   |     | 98   | 4                    | 0        | 3             | 57.14%     | 0                        | 0        | 0             | 0.00%      |
|          |                   | M   | 95   | 1                    | 0        | 0             | 100.00%    | 0                        | 1        | 0             | 100.00%    |
|          |                   |     | 96   | 0                    | 0        | 1             | 0.00%      | 0                        | 0        | 0             | 0.00%      |
|          |                   |     | 98   | 0                    | 0        | 0             | 0.00%      | 0                        | 0        | 1             | 0.00%      |
|          |                   |     |      |                      |          |               |            |                          |          |               |            |
| 75-79 yr | Driver/Errors     | F   | 94   | 89                   | 0        | 14            | 86.41%     | 44                       | 0        | 3             | 93.62%     |
|          |                   |     | 95   | 101                  | 0        | 19            | 84.17%     | 40                       | 0        | 1             | 97.56%     |
|          |                   |     | 96   | 102                  | 0        | 13            | 88.70%     | 52                       | 0        | 5             | 91.23%     |
|          |                   |     | 97   | 89                   | 0        | 14            | 86.41%     | 55                       | 0        | 0             | 100.00%    |
|          |                   |     | 98   | 99                   | 0        | 11            | 90.00%     | 58                       | 0        | 0             | 100.00%    |
|          |                   | M   | 94   | 54                   | 0        | 42            | 56.25%     | 108                      | 0        | 4             | 96.43%     |
|          |                   |     |      |                      |          |               |            |                          |          |               |            |

**Belt Use Among Persons Involved in Fatal or Serious Injury Crashes  
by Occupant Age, Sex, Injury, Seat Position, and Year**

| Age | Occupant Position | Sex | Year | KA Injured Occupants |          |               |            | Not KA Injured Occupants |          |               |            |
|-----|-------------------|-----|------|----------------------|----------|---------------|------------|--------------------------|----------|---------------|------------|
|     |                   |     |      | Belt Used            | CRD Used | Belt Not Used | % Belt Use | Belt Used                | CRD Used | Belt Not Used | % Belt Use |
|     |                   |     | 95   | 95                   | 0        | 24            | 79.83%     | 88                       | 0        | 8             | 91.67%     |
|     |                   |     | 96   | 78                   | 0        | 20            | 79.59%     | 103                      | 0        | 6             | 94.50%     |
|     |                   |     | 97   | 74                   | 0        | 21            | 77.90%     | 94                       | 0        | 9             | 91.26%     |
|     |                   |     | 98   | 79                   | 1        | 19            | 80.81%     | 96                       | 0        | 4             | 96.00%     |
|     |                   |     |      |                      |          |               |            |                          |          |               |            |
|     | Center front      | F   | 94   | 3                    | 0        | 1             | 75.00%     | 1                        | 0        | 0             | 100.00%    |
|     |                   |     | 95   | 1                    | 0        | 0             | 100.00%    | 0                        | 0        | 0             | 0.00%      |
|     |                   |     | 96   | 3                    | 0        | 0             | 100.00%    | 0                        | 0        | 1             | 0.00%      |
|     |                   |     | 98   | 1                    | 0        | 0             | 100.00%    | 0                        | 0        | 0             | 0.00%      |
|     |                   | M   | 94   | 0                    | 0        | 0             | 0.00%      | 1                        | 0        | 0             | 100.00%    |
|     |                   |     | 96   | 1                    | 0        | 0             | 100.00%    | 0                        | 0        | 0             | 0.00%      |
|     |                   |     | 98   | 0                    | 0        | 0             | 0.00%      | 0                        | 0        | 0             | 0.00%      |
|     | Right front       | F   | 94   | 51                   | 0        | 12            | 80.95%     | 9                        | 0        | 3             | 75.00%     |
|     |                   |     | 95   | 50                   | 0        | 10            | 83.33%     | 12                       | 0        | 1             | 92.31%     |
|     |                   |     | 96   | 48                   | 0        | 13            | 78.69%     | 13                       | 0        | 0             | 100.00%    |
|     |                   |     | 97   | 46                   | 0        | 8             | 85.19%     | 13                       | 0        | 0             | 100.00%    |
|     |                   |     | 98   | 45                   | 0        | 8             | 84.91%     | 12                       | 0        | 0             | 100.00%    |
|     |                   | M   | 94   | 8                    | 0        | 2             | 80.00%     | 0                        | 0        | 0             | 0.00%      |
|     |                   |     | 95   | 13                   | 0        | 3             | 81.25%     | 7                        | 0        | 0             | 100.00%    |
|     |                   |     | 96   | 11                   | 0        | 3             | 78.57%     | 4                        | 0        | 0             | 100.00%    |
|     |                   |     | 97   | 6                    | 0        | 5             | 54.55%     | 5                        | 0        | 1             | 83.33%     |
|     |                   |     | 98   | 6                    | 0        | 0             | 100.00%    | 3                        | 0        | 1             | 75.00%     |
|     | Left rear         | F   | 94   | 2                    | 0        | 1             | 66.67%     | 1                        | 0        | 1             | 50.00%     |
|     |                   |     | 95   | 0                    | 0        | 0             | 0.00%      | 3                        | 0        | 0             | 100.00%    |
|     |                   |     | 96   | 0                    | 0        | 0             | 0.00%      | 1                        | 0        | 0             | 100.00%    |
|     |                   |     | 97   | 0                    | 0        | 1             | 0.00%      | 1                        | 0        | 0             | 100.00%    |
|     |                   |     | 98   | 0                    | 0        | 1             | 0.00%      | 0                        | 0        | 0             | 0.00%      |
|     |                   | M   | 96   | 1                    | 0        | 0             | 100.00%    | 0                        | 0        | 0             | 0.00%      |
|     |                   |     | 98   | 1                    | 0        | 0             | 100.00%    | 1                        | 0        | 1             | 50.00%     |
|     | Center rear       | F   | 94   | 0                    | 0        | 1             | 0.00%      | 0                        | 0        | 0             | 0.00%      |
|     |                   |     | 95   | 1                    | 0        | 0             | 100.00%    | 1                        | 0        | 0             | 100.00%    |
|     |                   |     | 98   | 1                    | 0        | 0             | 100.00%    | 0                        | 0        | 0             | 0.00%      |
|     |                   | M   | 98   | 0                    | 0        | 0             | 0.00%      | 0                        | 0        | 0             | 0.00%      |
|     | Right rear        | F   | 94   | 1                    | 0        | 3             | 25.00%     | 2                        | 0        | 2             | 50.00%     |
|     |                   |     | 95   | 4                    | 0        | 3             | 57.14%     | 2                        | 0        | 1             | 66.67%     |
|     |                   |     | 96   | 0                    | 0        | 1             | 0.00%      | 1                        | 0        | 0             | 100.00%    |
|     |                   |     | 97   | 1                    | 0        | 2             | 33.33%     | 0                        | 0        | 1             | 0.00%      |
|     |                   |     | 98   | 2                    | 0        | 1             | 66.67%     | 1                        | 0        | 0             | 100.00%    |
|     |                   | M   | 94   | 1                    | 0        | 0             | 100.00%    | 0                        | 0        | 1             | 0.00%      |
|     |                   |     | 95   | 0                    | 0        | 0             | 0.00%      | 1                        | 0        | 0             | 100.00%    |
|     |                   |     | 96   | 1                    | 0        | 0             | 100.00%    | 0                        | 0        | 0             | 0.00%      |
|     |                   |     | 97   | 2                    | 0        | 0             | 100.00%    | 0                        | 0        | 0             | 0.00%      |

| Belt Use Among Persons Involved in Fatal or Serious Injury Crashes<br>by Occupant Age, Sex, Injury, Seat Position, and Year |                      |     |      |                      |             |                  |               |                          |             |                  |               |
|---|----------------------|-----|------|----------------------|-------------|------------------|---------------|--------------------------|-------------|------------------|---------------|
| Age   | Occupant<br>Position | Sex | Year | KA Injured Occupants |             |                  |               | Not KA Injured Occupants |             |                  |               |
|   |                      |     |      | Belt<br>Used         | CRD<br>Used | Belt Not<br>Used | % Belt<br>Use | Belt<br>Used             | CRD<br>Used | Belt Not<br>Used | % Belt<br>Use |
| 80-84 yr  | Driver/Errors        | F   | 98   | 0                    | 0           | 0                | 0.00%         | 0                        | 0           | 0                | 0.00%         |
|   |                      |     | 94   | 47                   | 0           | 18               | 72.31%        | 27                       | 0           | 2                | 93.10%        |
|   |                      |     | 95   | 41                   | 0           | 17               | 70.69%        | 23                       | 0           | 1                | 95.83%        |
|   |                      |     | 96   | 69                   | 0           | 6                | 92.00%        | 34                       | 0           | 3                | 91.89%        |
|   |                      |     | 97   | 64                   | 0           | 10               | 86.49%        | 27                       | 0           | 0                | 100.00%       |
|   |                      |     | 98   | 72                   | 0           | 12               | 85.71%        | 36                       | 0           | 0                | 100.00%       |
|   |                      | M   | 94   | 54                   | 0           | 18               | 75.00%        | 62                       | 0           | 5                | 92.54%        |
|   |                      |     | 95   | 46                   | 0           | 18               | 71.88%        | 74                       | 0           | 11               | 87.06%        |
|   |                      |     | 96   | 64                   | 0           | 23               | 73.56%        | 51                       | 0           | 4                | 92.73%        |
|   |                      |     | 97   | 57                   | 0           | 14               | 80.28%        | 44                       | 0           | 4                | 91.67%        |
|   |                      |     | 98   | 43                   | 0           | 13               | 76.79%        | 52                       | 0           | 3                | 94.55%        |
|   | Center front         | F   | 94   | 1                    | 0           | 1                | 50.00%        | 0                        | 0           | 0                | 0.00%         |
|   |                      |     | 95   | 1                    | 0           | 0                | 100.00%       | 0                        | 0           | 0                | 0.00%         |
|   |                      |     | 97   | 2                    | 0           | 0                | 100.00%       | 0                        | 0           | 0                | 0.00%         |
|   |                      |     | 98   | 1                    | 0           | 0                | 100.00%       | 0                        | 0           | 0                | 0.00%         |
|   |                      | M   | 95   | 1                    | 0           | 0                | 100.00%       | 0                        | 0           | 0                | 0.00%         |
|   |                      |     | 96   | 0                    | 0           | 1                | 0.00%         | 0                        | 0           | 0                | 0.00%         |
|   |                      |     | 98   | 0                    | 0           | 1                | 0.00%         | 0                        | 0           | 0                | 0.00%         |
|   | Right front          | F   | 94   | 24                   | 0           | 8                | 75.00%        | 6                        | 0           | 0                | 100.00%       |
|   |                      |     | 95   | 28                   | 0           | 8                | 77.78%        | 12                       | 0           | 1                | 92.31%        |
|   |                      |     | 96   | 34                   | 0           | 10               | 77.27%        | 10                       | 0           | 0                | 100.00%       |
|   |                      |     | 97   | 16                   | 0           | 4                | 80.00%        | 15                       | 0           | 0                | 100.00%       |
|   |                      |     | 98   | 20                   | 0           | 6                | 76.92%        | 4                        | 0           | 1                | 80.00%        |
|   |                      | M   | 94   | 9                    | 0           | 1                | 90.00%        | 4                        | 0           | 0                | 100.00%       |
|   |                      |     | 95   | 4                    | 0           | 5                | 44.44%        | 4                        | 0           | 0                | 100.00%       |
|   |                      |     | 96   | 10                   | 0           | 2                | 83.33%        | 4                        | 0           | 1                | 80.00%        |
|   |                      |     | 97   | 6                    | 0           | 3                | 66.67%        | 0                        | 0           | 0                | 0.00%         |
|   |                      |     | 98   | 7                    | 0           | 1                | 87.50%        | 1                        | 0           | 0                | 100.00%       |
|   | Left rear            | F   | 94   | 2                    | 0           | 0                | 100.00%       | 1                        | 0           | 0                | 100.00%       |
|   |                      |     | 95   | 3                    | 0           | 0                | 100.00%       | 1                        | 0           | 1                | 50.00%        |
|   |                      |     | 96   | 2                    | 0           | 0                | 100.00%       | 0                        | 0           | 0                | 0.00%         |
|   |                      |     | 97   | 3                    | 0           | 0                | 100.00%       | 1                        | 0           | 0                | 100.00%       |
|   |                      |     | 98   | 1                    | 0           | 1                | 100.00%       | 2                        | 0           | 0                | 100.00%       |
|   |                      | M   | 95   | 0                    | 0           | 0                | 0.00%         | 1                        | 0           | 0                | 100.00%       |
|   |                      |     | 96   | 0                    | 0           | 0                | 0.00%         | 0                        | 0           | 1                | 0.00%         |
|   |                      |     | 98   | 0                    | 0           | 1                | 0.00%         | 1                        | 0           | 0                | 100.00%       |
|   | Center rear          | F   | 97   | 1                    | 0           | 0                | 100.00%       | 0                        | 0           | 0                | 0.00%         |
|   |                      |     | 98   | 2                    | 0           | 0                | 100.00%       | 0                        | 0           | 0                | 0.00%         |
|   |                      | M   | 96   | 0                    | 0           | 1                | 0.00%         | 0                        | 0           | 0                | 0.00%         |
|   |                      |     | 98   | 0                    | 0           | 0                | 0.00%         | 0                        | 0           | 0                | 0.00%         |
|   | Right rear           | F   | 94   | 1                    | 0           | 0                | 100.00%       | 2                        | 0           | 0                | 100.00%       |



**Belt Use Among Persons Involved in Fatal or Serious Injury Crashes  
by Occupant Age, Sex, Injury, Seat Position, and Year**

| Age      | Occupant Position | Sex | Year | KA Injured Occupants |          |               |            | Not KA Injured Occupants |          |               |            |
|----------|-------------------|-----|------|----------------------|----------|---------------|------------|--------------------------|----------|---------------|------------|
|          |                   |     |      | Belt Used            | CRD Used | Belt Not Used | % Belt Use | Belt Used                | CRD Used | Belt Not Used | % Belt Use |
| 85-89 yr |                   | M   | 95   | 1                    | 0        | 1             | 50.00%     | 1                        | 0        | 1             | 50.00%     |
|          |                   |     | 96   | 2                    | 0        | 1             | 66.67%     | 1                        | 0        | 0             | 100.00%    |
|          |                   |     | 97   | 3                    | 0        | 0             | 100.00%    | 0                        | 0        | 0             | 0.00%      |
|          |                   |     | 98   | 0                    | 0        | 2             | 0.00%      | 0                        | 0        | 0             | 0.00%      |
|          |                   |     | 94   | 0                    | 0        | 1             | 0.00%      | 0                        | 0        | 0             | 0.00%      |
|          |                   |     | 96   | 1                    | 0        | 1             | 50.00%     | 0                        | 0        | 0             | 0.00%      |
|          |                   |     | 97   | 0                    | 0        | 1             | 0.00%      | 0                        | 0        | 0             | 0.00%      |
|          |                   |     | 98   | 0                    | 0        | 0             | 0.00%      | 0                        | 0        | 0             | 0.00%      |
|          | Driver/Errors     | F   | 94   | 25                   | 0        | 6             | 80.65%     | 6                        | 0        | 1             | 85.71%     |
|          |                   |     | 95   | 24                   | 0        | 8             | 75.00%     | 13                       | 0        | 0             | 100.00%    |
|          |                   |     | 96   | 16                   | 0        | 6             | 72.73%     | 5                        | 0        | 0             | 100.00%    |
|          |                   |     | 97   | 23                   | 0        | 6             | 79.31%     | 13                       | 0        | 0             | 100.00%    |
|          |                   |     | 98   | 22                   | 0        | 4             | 84.62%     | 7                        | 0        | 1             | 87.50%     |
|          |                   | M   | 94   | 19                   | 0        | 15            | 55.88%     | 20                       | 0        | 4             | 83.33%     |
|          |                   |     | 95   | 19                   | 0        | 12            | 61.29%     | 26                       | 0        | 1             | 96.30%     |
|          |                   |     | 96   | 22                   | 0        | 9             | 70.97%     | 21                       | 0        | 1             | 95.46%     |
|          | Center front      | F   | 97   | 27                   | 0        | 9             | 75.00%     | 23                       | 0        | 1             | 95.83%     |
|          |                   |     | 98   | 27                   | 0        | 11            | 71.05%     | 20                       | 0        | 2             | 90.91%     |
|          |                   |     | 96   | 0                    | 0        | 1             | 0.00%      | 0                        | 0        | 0             | 0.00%      |
|          |                   | M   | 98   | 0                    | 0        | 0             | 0.00%      | 0                        | 0        | 0             | 0.00%      |
|          | Right front       | F   | 94   | 16                   | 0        | 2             | 88.89%     | 0                        | 0        | 1             | 0.00%      |
|          |                   |     | 95   | 12                   | 0        | 0             | 100.00%    | 6                        | 0        | 0             | 100.00%    |
|          |                   |     | 96   | 16                   | 0        | 6             | 72.73%     | 4                        | 0        | 0             | 100.00%    |
|          |                   |     | 97   | 16                   | 0        | 6             | 72.73%     | 4                        | 0        | 0             | 100.00%    |
|          |                   |     | 98   | 12                   | 0        | 4             | 75.00%     | 4                        | 0        | 0             | 100.00%    |
|          |                   | M   | 94   | 3                    | 0        | 2             | 60.00%     | 4                        | 0        | 0             | 100.00%    |
|          |                   |     | 95   | 3                    | 0        | 3             | 50.00%     | 1                        | 0        | 0             | 100.00%    |
|          |                   |     | 96   | 3                    | 0        | 2             | 60.00%     | 0                        | 0        | 0             | 0.00%      |
|          | Left rear         | F   | 97   | 5                    | 0        | 4             | 55.56%     | 1                        | 0        | 1             | 50.00%     |
|          |                   |     | 98   | 6                    | 0        | 2             | 75.00%     | 3                        | 0        | 0             | 100.00%    |
|          |                   |     | 94   | 0                    | 0        | 1             | 0.00%      | 0                        | 0        | 1             | 0.00%      |
|          |                   |     | 95   | 1                    | 0        | 0             | 100.00%    | 1                        | 0        | 0             | 100.00%    |
|          |                   |     | 96   | 0                    | 0        | 0             | 0.00%      | 1                        | 0        | 0             | 100.00%    |
|          | Center rear       | F   | 97   | 0                    | 0        | 0             | 0.00%      | 0                        | 0        | 1             | 0.00%      |
|          |                   | M   | 98   | 0                    | 0        | 0             | 0.00%      | 1                        | 0        | 0             | 100.00%    |
|          | Right rear        | F   | 98   | 1                    | 0        | 0             | 100.00%    | 0                        | 0        | 0             | 0.00%      |
|          |                   | M   | 98   | 0                    | 0        | 0             | 0.00%      | 0                        | 0        | 0             | 0.00%      |
|          |                   | F   | 98   | 0                    | 0        | 0             | 0.00%      | 0                        | 0        | 0             | 0.00%      |
|          |                   |     | 94   | 0                    | 0        | 0             | 0.00%      | 0                        | 0        | 0             | 0.00%      |

**Belt Use Among Persons Involved in Fatal or Serious Injury Crashes  
by Occupant Age, Sex, Injury, Seat Position, and Year**

| Age     | Occupant Position | Sex | Year | KA Injured Occupants |          |               |            | Not KA Injured Occupants |          |               |            |
|---------|-------------------|-----|------|----------------------|----------|---------------|------------|--------------------------|----------|---------------|------------|
|         |                   |     |      | Belt Used            | CRD Used | Belt Not Used | % Belt Use | Belt Used                | CRD Used | Belt Not Used | % Belt Use |
|         |                   |     | 95   | 0                    | 0        | 1             | 0.00%      | 0                        | 0        | 0             | 0.00%      |
|         |                   |     | 96   | 0                    | 0        | 1             | 0.00%      | 0                        | 0        | 0             | 0.00%      |
|         |                   |     | 97   | 2                    | 0        | 3             | 40.00%     | 0                        | 0        | 1             | 0.00%      |
|         |                   |     | 98   | 0                    | 0        | 0             | 0.00%      | 0                        | 0        | 0             | 0.00%      |
|         |                   | M   | 94   | 0                    | 0        | 1             | 0.00%      | 0                        | 0        | 0             | 0.00%      |
|         |                   |     | 98   | 0                    | 0        | 0             | 0.00%      | 0                        | 0        | 0             | 0.00%      |
|         |                   |     |      |                      |          |               |            |                          |          |               |            |
|         |                   |     |      |                      |          |               |            |                          |          |               |            |
| 90 + yr | Driver/Errors     | F   | 94   | 3                    | 0        | 2             | 60.00%     | 2                        | 0        | 0             | 100.00%    |
|         |                   |     | 95   | 4                    | 0        | 1             | 80.00%     | 1                        | 0        | 1             | 50.00%     |
|         |                   |     | 96   | 5                    | 0        | 0             | 100.00%    | 2                        | 0        | 0             | 100.00%    |
|         |                   |     | 97   | 7                    | 0        | 0             | 100.00%    | 1                        | 0        | 0             | 100.00%    |
|         |                   |     | 98   | 9                    | 0        | 1             | 90.00%     | 4                        | 0        | 0             | 100.00%    |
|         |                   | M   | 94   | 4                    | 0        | 2             | 66.67%     | 5                        | 0        | 1             | 83.33%     |
|         |                   |     | 95   | 3                    | 0        | 1             | 75.00%     | 12                       | 0        | 0             | 100.00%    |
|         |                   |     | 96   | 8                    | 0        | 5             | 61.54%     | 7                        | 0        | 1             | 87.50%     |
|         |                   |     | 97   | 3                    | 0        | 2             | 60.00%     | 11                       | 0        | 0             | 100.00%    |
|         |                   |     | 98   | 8                    | 0        | 3             | 72.73%     | 5                        | 0        | 0             | 100.00%    |
|         | Center front      | F   | 96   | 0                    | 0        | 0             | 0.00%      | 1                        | 0        | 0             | 100.00%    |
|         |                   |     | 98   | 0                    | 0        | 1             | 0.00%      | 0                        | 0        | 0             | 0.00%      |
|         |                   | M   | 98   | 0                    | 0        | 0             | 0.00%      | 0                        | 0        | 0             | 0.00%      |
|         | Right front       | F   | 94   | 4                    | 0        | 2             | 66.67%     | 1                        | 0        | 0             | 100.00%    |
|         |                   |     | 95   | 9                    | 0        | 0             | 100.00%    | 1                        | 0        | 0             | 100.00%    |
|         |                   |     | 96   | 6                    | 0        | 4             | 60.00%     | 2                        | 0        | 0             | 100.00%    |
|         |                   |     | 97   | 7                    | 0        | 3             | 70.00%     | 1                        | 0        | 0             | 100.00%    |
|         |                   |     | 98   | 4                    | 0        | 2             | 66.67%     | 0                        | 0        | 0             | 0.00%      |
|         |                   | M   | 94   | 3                    | 0        | 3             | 50.00%     | 1                        | 0        | 0             | 100.00%    |
|         |                   |     | 95   | 1                    | 0        | 1             | 50.00%     | 1                        | 0        | 0             | 100.00%    |
|         |                   |     | 96   | 2                    | 0        | 0             | 100.00%    | 3                        | 0        | 0             | 100.00%    |
|         |                   |     | 97   | 3                    | 0        | 1             | 75.00%     | 1                        | 0        | 0             | 100.00%    |
|         |                   |     | 98   | 1                    | 0        | 0             | 100.00%    | 0                        | 0        | 0             | 0.00%      |
|         | Left rear         | F   | 96   | 1                    | 0        | 0             | 100.00%    | 0                        | 0        | 0             | 0.00%      |
|         |                   |     | 97   | 1                    | 0        | 1             | 50.00%     | 1                        | 0        | 0             | 100.00%    |
|         |                   |     | 98   | 0                    | 0        | 2             | 0.00%      | 0                        | 0        | 0             | 0.00%      |
|         |                   | M   | 98   | 0                    | 0        | 0             | 0.00%      | 0                        | 0        | 0             | 0.00%      |
|         | Center rear       | F   | 98   | 0                    | 0        | 0             | 0.00%      | 0                        | 0        | 0             | 0.00%      |
|         |                   | M   | 98   | 0                    | 0        | 0             | 0.00%      | 0                        | 0        | 0             | 0.00%      |
|         | Right rear        | F   | 94   | 0                    | 0        | 1             | 0.00%      | 0                        | 0        | 0             | 0.00%      |
|         |                   |     | 96   | 1                    | 0        | 1             | 50.00%     | 0                        | 0        | 0             | 0.00%      |
|         |                   |     | 98   | 0                    | 0        | 0             | 0.00%      | 0                        | 0        | 0             | 0.00%      |
|         |                   | M   | 95   | 0                    | 0        | 1             | 0.00%      | 0                        | 0        | 1             | 0.00%      |
|         |                   |     | 98   | 0                    | 0        | 0             | 0.00%      | 0                        | 0        | 0             | 0.00%      |